

• MARCH 1959

BUTANE-PROPANE

A CHILTON PUBLICATION

News

Sell for stock, sell
stock, or merge?

PROMOTIONS
THAT PAID

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931

do accounts receivable tie up your capital and create collection headaches?



Vapor metering will get to the core of the accounts receivable problem by replacing large "cash-on-delivery" collections with small pay-as-you-use monthly bills. These are the bills that customers can more easily anticipate, budget and pay.

Lowered accounts receivable is only one good reason for switching your operation to metered service. In fact, there are seven valid reasons—all profitable—that are spelled out in our folder ADV-41. Write for your copy today. Rockwell Manufacturing Company, Pittsburgh 8, Pa.

vapor metering will improve your profit picture



The Meter That Will Put More Profits
In Your Pocket

These are the vapor meters you need. Aluminum, rust-proof case. Easy to install on furnished brackets. And they can be repaired, quickly, easily.

LP-GAS VAPOR METERS

another fine product by

ROCKWELL





Close-up of HACKNEY two-bottom-head construction. Second bottom head is tightly welded to bottom head of cylinder.



Hackney
MILWAUKEE

LP-Gas Cylinders Prove

Two heads are better than one!

The two bottom heads you get in the new Hackney 100-pound LP-Gas cylinders really give you *double value!*

You get double protection against rust and corrosion ...elimination of cracks and crevices that can hold rust-starting ice, snow and mud.

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You get double-bottom strength. The *extra* bottom head—a single, tough piece of steel—is hermetically sealed in place by X-ray controlled welding all the way around. Adds strength where it is needed most.

You get double help with cost-cutting. The double-bottom head reduces costly bottom maintenance. Makes cleaning and painting easier, faster. Will double years of service.

Before you buy 100-pound cylinders, get the facts about many advantages of the HACKNEY Model RC-100A-DB double-bottom cylinders. Write today to:



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Manufacturer of Hackney Products

1487 South 66th Street, Milwaukee 14, Wisconsin

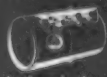
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ROBERTSHAW

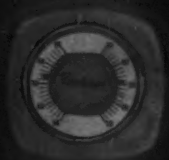
your savings show up here

✱ a NEW savings package

✱ Announcing the new 110E (24 Volt, low cost electric space heater control) and the 110E.R (same as the 110E except with gas pressure regulator added) either to be used with the TR125 Wall Thermostat.



110E



TR 125



110E.R



TSC 110 — low cost manual control



110S — low cost automatic operation



110SR — low cost automatic operation with gas pressure regulator

Robertshaw-Fulton

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MARCH 1959

BUTANE-PROPANE

News

Volume 21-Number 3

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FASTER FILLING

FOR DOMESTIC
ASME SYSTEMS

NEW FASTER FILLING SERIES 8594

Includes high-capacity *double back check* filler valve, vapor equalizing and excess flow valve, service line shut-off valve, fixed liquid level gauge, liquid transfer connection protected by RegO Chek-Lok excess flow valve, and provision for liquid baffle or eduction pipe. Optional features: pressure gauge, single or two-stage pressure regulation, Tri-O-Seal inlet connection. Supersedes Series 2594.

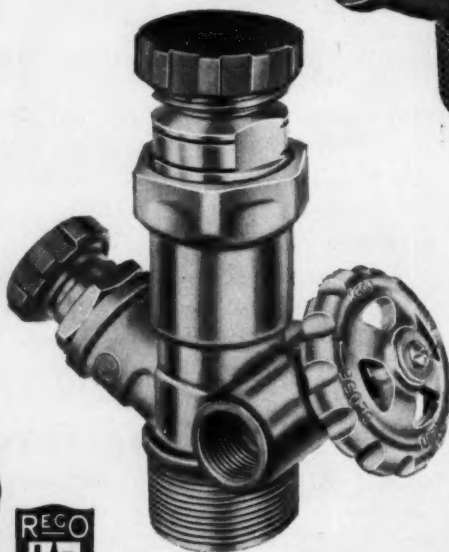
NEW FASTER-FILLING SERIES 8593

Includes high-capacity *double back check* filler valve, vapor equalizing and excess flow valve, service line shut-off valve, fixed liquid level gauge, and provision for liquid baffle or eduction pipe. Optional features: pressure gauge, single or two-stage pressure regulation, Tri-O-Seal inlet connection. Supersedes Series 2593.



NEW TOP-WRENCHING FOR ECONOMICAL INSTALLATION

Tank fabricators will like especially the top hex-wrenching section on these new MultiValve Assemblies. This permits quick, convenient, cost-saving assembly with power wrenches. RegO has available a special modified deep socket that goes on right over the filler cap, and fits snugly. Another RegO "first" to help you cut costs!



DO YOU KNOW
it will pay you
dividends to join!



EXCLUSIVE

RegO Chek-Lok now
standard on all Multi-
Valve Assemblies sup-
plied with Liquid Trans-
fer Connections

new REGO MULTI VALVE

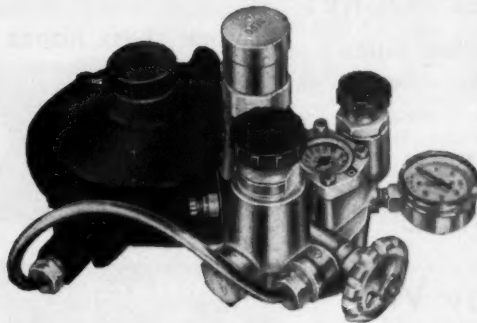
UNITS SERVE YOU BETTER THAN EVER!

Faster filling than previous models...higher vapor return rate...new Chek-Lok. RegO brings you all three innovations *plus* long-recognized MultiValve unit excellence. Already famous for use-proved economy and enduring, dependable service, new MultiValve units as RegO makes them mean even greater over-all convenience and savings.

For the tank fabricator—easy socket-wrench installation, established field preference. For the fuel distributor—RegO quality, trouble-free filling in shorter time. For the user—reliability year after year...everybody benefits! On all types of installations, MultiValve units now serve you better than ever...and of course they're made only by RegO!

NEW FASTER-FILLING 8475 & 8477 SERIES

This single head, requiring only one tank opening, contains complete system controls. Regulator bracket is furnished, and pigtail is bent to shape. Both the Series 8475 & 8477 include: high-capacity double back check filler valve, vapor equalizing and excess flow valve, service line shut-off valve, safety relief valve, provision for liquid baffle or eduction pipe and slip-tube or float-type liquid level gauge. Fixed liquid level gauge, pressure gauge, and single or two-stage regulation are optional. Series 8477 also includes a liquid transfer connection protected by a separate excess flow valve with RegO Chek-Lok. Supersedes 1475 & 1477 Series and 8575 & 8577 Series.



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For ICC containers up to 420-lb. LP-Gas capacity and small ASME containers...Series 2535. For ICC containers up to 200-lb. LP-Gas capacity, and having a 3/4" pipe-thread opening...Series 7555. For money-saving reliability it pays to specify RegO, whatever the service requirements.

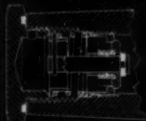
YOU GET
EXTRA
PROTECTION
FROM THESE

EXCLUSIVES



REGO DOUBLE BACK CHECK FILLER VALVE

Two separate check valves — not merely a single check valve which works with an excess flow valve. Both open easily with flow of LP-Gas into tank; close instantly when flow stops. Prevents dangerous and unexpected discharge of liquid. Available only with RegO.



REGO CHEK-LOK®

Permits attachment of shut-off valve to liquid transfer connection when system is in service. Holds check mechanism in "closed" position while plug is removed. Opens automatically when shut-off valve or RegO adapter is assembled. Standard on Series 8477 and 8594.



REGO TRI-O-SEAL®

Provides a leakproof O-ring seal between valve body and container opening. Crush ring allows one full additional turn of MultiValve body for proper orientation. Optional on Series 8593 and 8594 to speed quick installation with RegO.



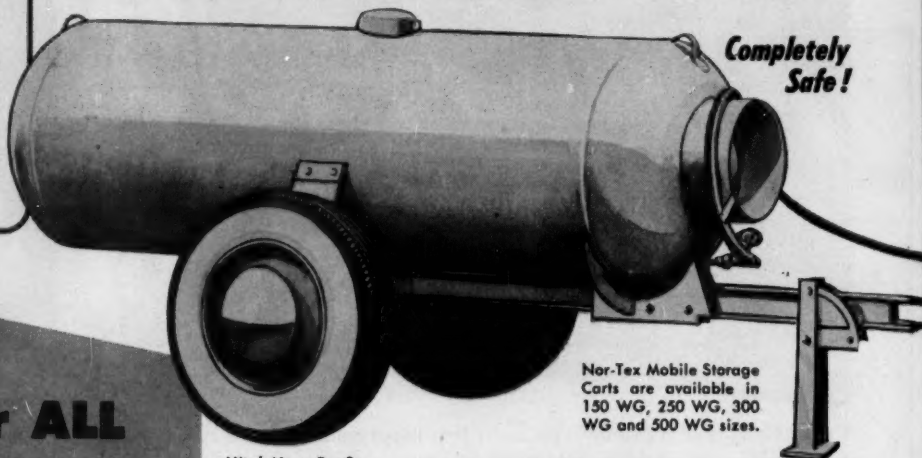
All RegO MultiValve units are listed by Underwriters' Laboratories, Inc., and supplied fully assembled and tested. For safety, service, and wide selection you can always depend upon RegO!

BALANCE YOUR LOAD THE

POPULAR Nor-Tex Mobile Storage

Well-baffled...Easy to "spot" with car, truck or tractor. Safely place your fuel right where you need it! Heavy duty axle with standard Chevrolet hub and 15" wheels. I-beam tongue...Recessed relief valve...1 1/2" hose...and 3/4" OIC valve and coupling.

"Keeping up-to-date" proves more and more to be an absolute essential to PROFIT in today's progressive LPG bulk plant operation. Manufacturing tanks...operating bulk plants...and running retail appliance stores has taught Nor-Tex much about PROGRESS and its direct relationship to PROFIT. These combined experiences have resulted in many helpful, time-saving product and service "extras" and sharing them has won us many customer friends.



Nor-Tex Mobile Storage Carts are available in 150 WG, 250 WG, 300 WG and 500 WG sizes.

LOOK TO Nor-Tex For ALL Your LPG NEEDS



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Hitch Your Profits To A Nor-Tex STAR



Internal Relief Valve On All STAR Systems

DOMESTIC TANKS

Built to last a lifetime! The safest, finest quality tank you can buy. Satisfaction guaranteed. Built to meet all national, state and local codes. Buy one or a carload.

Nor-Tex ROCKET

Boosting Sales Everywhere

Everyone is talking about the excellent Nor-Tex attention-compelling, sales-boosting LPG Service Station...flexible to any type of installation...occupies only 72" diameter.



May We Help You?

Interested attention, experienced assistance and helpful suggestions are yours for the asking.

HAUL EXTRA GALLONS

Nor-Tex STANDARD TWIN

DELIVER MORE GALLONS

Nor-Tex PAYLOAD SPECIAL

WORK FEWER HOURS

Nor-Tex CUSTOM TWIN

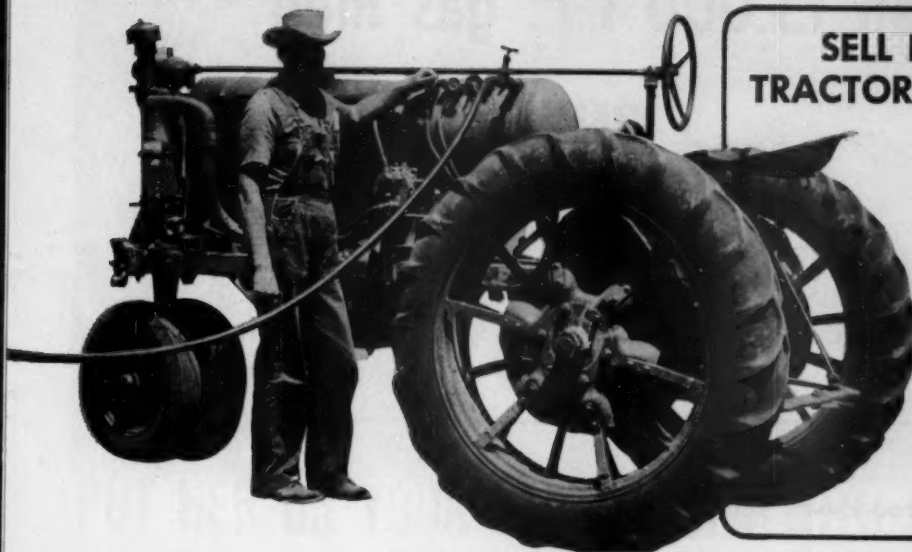
DRIVE LESS MILES

Nor-Tex DE LUXE TWIN

EARN MORE MONEY

NORTH TEXAS

PROGRESSIVE *Nor-Tex* WAY



SELL PROFITABLE TRACTOR CONVERSIONS

Balance your load by telling the advantages of LP-Gas in Internal Combustion Engines. It will help you sell conversions of all types of mobile and stationary equipment. Conversions save up to 60% on fuel. Oil consumption is reduced 80%. Engine wear reduced 75%. Oil dilution and carbon deposits eliminated. 2 to 1 engine life ratio. Replacement of parts practically nil. There are 78 Nor-Tex custom models available in 62 sizes. Tell their benefits and you'll sell them.

4 BIGGER PAYLOAD *Nor-Tex* DELIVERY UNITS

2500 WG Units Now Weigh Under 23,000 lbs. Loaded!

Every bulk plant operator is interested in these four new, sleek, LIGHTWEIGHT, streamlined, twin or single barrel Nor-Tex LPG Delivery Units with their high flow plumbing. Even 3000 WG units and over are within the 18,000 lb.

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NEW

**AMERICAN®
WELDED
STEELCASE
WC-45-LPG
METERS**



SPECIFICATIONS

Rated capacity 45 cfh propane and 40 cfh butane at 1/2-inch w.c. differential — 5 psi working pressure — 1/2-inch F.P.T. connections — shipping weight 8 lb. F.O.B. Philadelphia.

CONSTRUCTION

Sturdy, light weight, welded steelcase construction — removable soldered top for easy meter accessibility — new lifetime corrosion protective finish.

INDEX

Internal, counter-type index for easy meter reading — one-piece, plastic index box glass eliminates breakage problems.

FEATURES

Bellows-type, molded Duramix diaphragms for LP-Gas service — one-piece, Nylon valve guides — grommet-type flag rod seals for minimum friction.



One satisfied customer sells another when you build confidence and give economical, dependable LP-Gas metered service with American® meters. More and more industry leaders every day are profiting from the load-building advantages of metered service... and making big SAVINGS: savings in delivery costs — savings in storage space — savings in man hours — savings in maintenance costs.

LP-Gas meters bring "utility-type" service to your customers — helps you sell more gas and gas appliances. To learn how you can build loads faster and reduce operating costs, write for American's free booklet, "Guide to LP-Gas Metered Service", or ask your American representative for a copy.

American's attractive new WC-45-LPG Welded Steelcase meters are ideal for average domestic service and provide accurate measurement from pilot to full capacity. Larger capacity Welded Steelcase, Aluminumcase and Ironcase meters also available for small commercial and home heating loads.



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is only
a few
months
away!



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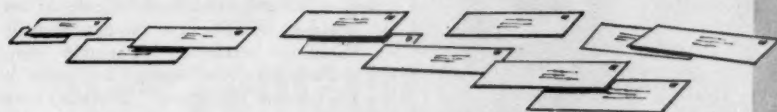
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WARREN PETROLEUM CORPORATION
TULSA, OKLAHOMA

**BPN**

Letters

Volume reduced with rising gage pressure

California

Please send by return mail the following information:

If 1 gal. of propane makes 37.1 cu ft of gas mixture at atmospheric pressure, sea level, how many cubic feet of propane equals 1 gal. at 5 lb pressure?

N. E. W.

If 1 gal. of propane produced 37.1 cu ft of vapor measured at atmospheric pressure at sea level, it would be reduced in volume to 27.7 cu ft when measured at 5 lb gage pressure and the same temperature.

The volume occupied by a given mass of gas varies inversely with the absolute pressure if the temperature is not allowed to change.

Since you are dealing with 1 gal. the mass is constant and the volume reduces as the pressure increases. The variation is in proportion to the absolute pressure. The absolute pressure at sea level is 14.7 lb per sq in. Absolute pressure at 5 psig is then $14.7 + 5 = 19.7$ psia. Then the volume at 5 psig is $37.1 \times 14.7/19.7 = 27.7$ cu ft.—Ed.



Powering motor, refrigerating truck has many problems

Kansas

During the past three years I have been working on an L. P. gas fuel system on my car where I use L. P. gas to power the motor and the expansion of the gas from liquid to vapor to cool the interior of the car.

I now have a patent pending on this invention. A patent search was made, revealing that no patent of this type had been applied for. My patent attorney filed with the patent office in Washington, D. C., for this patent. Due to the length

of time it takes to receive a patent I am most interested in furthering the development of this invention as soon as possible.

The amount of refrigeration employed to cool the interior of a vehicle depends on the amount of fuel the engine consumes.

Using 80-20 mix (80 butane-20 propane) in my car I get 12 miles per gal. at 60 miles per hour, which is 5 gal. per hour $\times 4.59$ (weight of one gallon of 80-20 mix) equals 22.95 lb of fuel used in one hour, 22.95×145 Btu (the amount of heat to vaporize one pound of liquid of 80-20 mix) equals 3328 Btu of refrigeration per hour. This amount of refrigeration cools the inside of my car to 86 deg. F with the outside temperature 100 deg. F.

I believe this would be ideal for trucks, because the consumption rate is more than twice the amount of L. P. gas fuel as shown above.

Without the use of a compressor there is no loss of power or gas mileage.

The only added equipment necessary outside of the regular L. P. gas equipment is listed as follows: evaporator coil with fan, fuelock, and a switch controlled by a vacuum diaphragm.

Any assistance you might be able to render concerning whom I might contact who would be interested in an invention of this type would be greatly appreciated.

G. A. P.

I do not think that the help and information that I am about to give you is going to be the type which you hoped for. The reason is that there has been work of this nature done before.

Patent No. 1905971 was issued to D. W. Davison and Ferdinand G. Welke in 1931. It covers essentially the same work which you have in mind. This patent was assigned or sold to Shell Development Co. Inc. of New York. The patent has run out and I do not think it has been re-

newed. This may account for your patent search not finding it.

In 1931 or 1932, the McCord Radiator Co. in Detroit installed equipment on a meat delivery truck. The meat truck had been precooled to around 48 deg. when the load of meat was placed on it. The temperature on the outside was rather high, it being a summer day, and a great many stops were made in delivering the meat. As I remember the records, there were many openings and closings of the doors, but, the temperature in the body of the truck was maintained around 48 deg. and even a little lower.

Harold Smith, president of American Liquid Gas Corp., also did some work under agreement with the Shell Development Co. Some interesting results were obtained on a vehicle which was carrying vegetables and food through the desert country of California. The ambient temperature was around 100 deg. and the truck, under heavy load and climbing a grade most of the trip, used enough fuel to reduce the temperature inside the produce body to about 38 deg. F. This was air temperature and did not cool the load.

This application of L. P. gas could be used only on trucks. It would not be safe application on semi-trailers and trailers because the gas lines could be broken. All codes prohibit L. P. gas lines between the prime mover and semi- or full trailers.

The American Liquid Gas Corp., holds similar effective patents for using the expansion of L. P. gas and the consequent refrigerating effect in cooling the air in the manifolds of automotive equipment. The purpose of this is to cool the air so that a greater charge of power may be developed within the engine cylinder.

There have been numerous inquiries for a device like you contemplate for cooling truck bodies. The L. P. gas codes prohibit carrying liquid or vapor into the passenger compartment of a vehicle. Any arrangement would need to be such that the cooling coils

**SURE,
SHE'S MAD...
BUT GUESS
WHO'LL BE
MADDER!**

**YOU...IF "LEAKING TANKS" CAUSED BY INCOMPLETELY VENTED
WATER HEATERS ARE FORCING YOU TO MAKE COSTLY CALL-BACKS!**

An all-Metalbestos gas vent is your low-cost insurance against this extra expense...because the water that collects under many water heaters vented by single-wall connectors isn't really a leak at all! It's simply part of the 2½ pints of water that an average gas water heater releases every hour in the form of water vapor.

The only power available to expel this water vapor is the heat in the vent gases themselves...but modern, efficient water heaters transfer

most of that heat to the water tank. The small amount of heat that's left must be conserved by a **double-wall insulated Metalbestos gas vent**, or else the water vapor will condense to water and drain back to rust the appliance or spill out onto the floor. That's when your customer calls you back to repair the damage...at your expense!



The Metalbestos "Safety Seal" is Your Protection From "False Leaks"...because only an all-Metalbestos gas vent, installed correctly and permanently with the Metalbestos "Safety System" Gas Vent Tables, rates this Seal. For your free copy of the "Safety System" Tables, write to Dept. M-3.

Stocked by principal distributors in all major cities.



METALBESTOS DIVISION

WILLIAM WALLACE COMPANY • BELMONT, CALIF.

and gas lines would be in some other compartment, with the cooled air moving into the passenger compartment. The design would need to be such that fuel which might leak in case of an accident, or failure in the cooling coils could not enter the passenger compartment. The reason for such a prohibition is obvious. If the system on your automobile does not have this protection you had better remove it before someone is injured.

One of the major deterrents in developing this system for trucks is the loss of refrigeration when the truck motor is idle during stops and delivery periods.

The development of the small L.P. gas and gasoline fueled internal combustion engine operated refrigerating units for big reefer trucks also makes the development of something like you have in mind difficult. They are mounted on the body of the vehicle using them and are not dependent on the operation of the truck engine.

I feel it is best that you see this side of the picture before you invest too much and then learn of these things.—Ed.



**Don't adjust engine
timing by chance**

Illinois

I have a 1955 Chevrolet 210 series, with straight transmission, 6-cylinder engine which I converted.

My problem is mileage. On gasoline, I averaged 20 plus miles per gal., on L. P. gas this is down to 12.

The only change to the engine at all was to block the heat riser and advance the timing very slightly.

Also on a F 600 1956 256 cu in. Ford should the balance line be used?

J. H.

We agree that a drop from 20 miles per gal. on gasoline to 12 on L. P. gas is quite a difference. Some drop in mileage is expected because the heating value per gallon of L. P. gas is far below that of gasoline.

The L. P. gas carburetor may be the wrong size for the engine. Check with the manufacturer and be sure that it is the correct one for the model engine it is serving.

Timing should not be adjusted by chance. There is no way of knowing if the timing is correct unless it is set with the aid of a tachometer. Use an electric tachometer and adjust

Through the years only one burner has remained America's *Favorite*

INSTANT FULL FLAME

Famous "2 in 1" dual throat burner that provides measured heat... brings food to cooking temperature in shortest possible time.



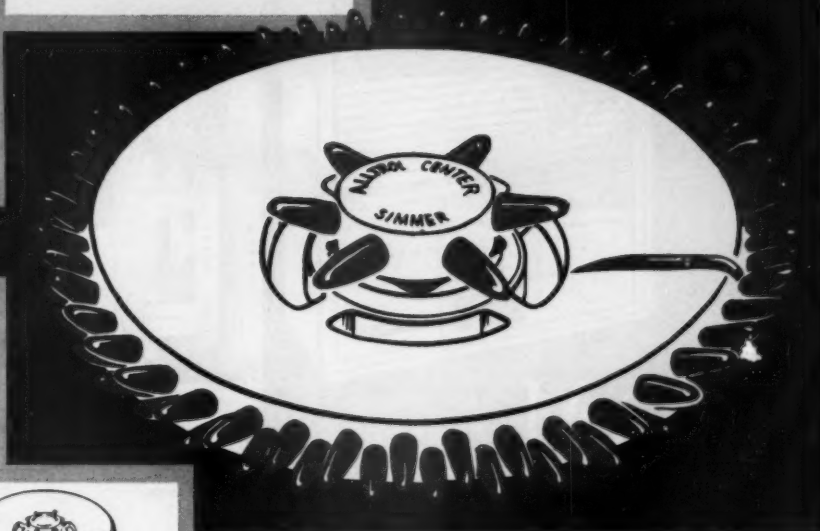
"CLICK"...convenient Low Fry heat for uniform browning or frying.



"CLICK"...efficient Center Simmer maintains boiling in any covered utensil.



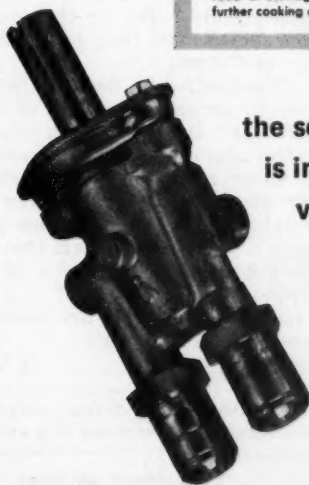
"CLICK"...Keep-Warm heat keeps food at serving temperature without further cooking or loss of food flavors.



HARPER ALLTROL®

THE ORIGINAL

center simmer burner



the secret
is in this
valve!

Here's the burner that both mother and daughter can agree on! And while Harper engineers have developed many more recent innovations, the Alltrol Center Simmer burner *still* remains first choice among homemakers.

But then—is it any wonder this "measured heat" burner is so popular? It's simple and easy to use... clean, cool and thrifty... assures a lifetime of cooking triumphs.


Isn't it time (under today's competitive situation) to insist on these sales-producing burners for ALL your gas ranges—not just your deluxe ones?

Write for free sales demonstration book.

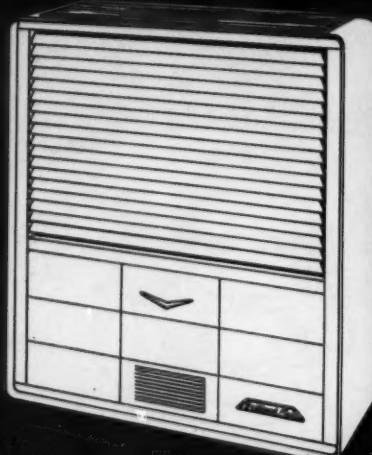
HARPER-WYMAN COMPANY

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*Modern
MAGIC*



V.O.M.
Sealed Heating

Vent--magic WALL HEATER

Patent Applied For

Dramatically different; Complete, Compact, Safe. Mounts on (not in) any outside wall. No chimney, no ductwork. Sealed exchanger; burnt gases cannot enter room. Expansive louvered panel frees maximum heat quickly; accents warm floors. Easy to install and service; all controls handy via front Service Door. Completely automatic; 100% Safety Shutoff. A.G.A. Approved. Beautifully finished in Coppertone & Cafe' baked enamel.

• **BLOWER** is optional; easy to add anytime. **VENT** is weatherproof, windproof, pestproof. Features Aluminized Steel construction.

WRITE FOR THESE

- ▶ **V-O-M SEALED WALL HEATERS**, ask for Specs File No. 773.
- ▶ **RECESSED WALL HEATERS**, ask for Specs File No. 753.
- ▶ **CATALOG NO 59**, for Consoles, Utility & Fireplace Heaters.

*Brilliant
Fire*
Heaters

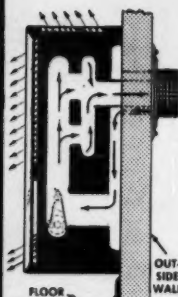
FOR NATURAL • MANUFACTURED • MIXED • LP-GASES

THE OHIO FOUNDRY & MFG. CO. "America's Finest Since 1846" STEUBENVILLE, OHIO

**NO/
CHIMNEY
!**



V-O-M MAGIC VENT
BREATHES THRU WALL



HERMETICALLY
SEALED
HEAT
EXCHANGER

**COMPLETELY
AUTOMATIC**

the engine speed to 1700 rpm. Adjust the throttle stop screw to attain the speed so the throttle setting will remain constant. Trying to hold the throttle by hand is not satisfactory.

Adjust the timing, either advance or retard until a peak rpm is attained on the tachometer. After this peak has been determined, retard the timing until a drop of 25 rpm is attained. This should be the proper timing.

The balance line is not normally required on the equipment which you mentioned.—Ed.



Problems of weighing and metering gas

Wisconsin

Recently our state purchased an L. P. gas volumetric prover. We had our bulk trucks checked by this instrument which is approved by the National Bureau of Standards. Here is our problem:

We have been selling all of our bulk propane on a temperature corrected basis. Our meter is supposedly sealed at gallon for gallon at 60 deg. We have one customer at an elevator that uses considerable gas for corn drying that wants all of his propane purchased by weight.

This morning we delivered him gas. Our tare weight was 2586 lb. and our meter read 610.1 gal. The temperature upon delivery was 36 deg. above. Now, selling this gas temperature corrected we would multiply 610.1 gal. by the correction factor 1.038 for a total gallonage of 633 gal.

Our question is, does gas weigh 4.24 lb. per gal. regardless of temperature? Does 231 cu in. equal a gallon regardless of temperature? If these are not constant, where can we obtain a chart showing the weight of a gallon at various temperatures and also a chart showing the cubic inches in a gallon at various temperatures?

If these variables are constant where was our error?

H. L.

A gallon is 237 cu in. regardless of temperature. A gallon is a volume measurement.

L. P. gas is denser at lower temperatures than at higher temperatures. That means, if you had a gallon of liquid (231 cu in.) at 60 deg. F, and then cooled it to say 30 deg. F, you would not have 231 cu in. but



SURE, he is sure . . .

He has no worries since his new plant from blueprints to completion was handled by ANCO!

Anco's services include engineering, construction, and turnkey installation of bulk distribution plants, river terminals, barge tanks, stand by plants, gas-air mix plants, stand by systems or pipeline terminals.

Before you buy ask ANCO!



*Liquefied Petroleum Gas and Anhydrous Ammonia Equipment
(Flint Tanks . . . of Course)*



Manufacturing & Supply Co.

Tulsa, Oklahoma • 21st at Union • LUther 4-6187

Memphis, Tenn. — 241 Industrial Avenue — WHitehall 6-1694

East St. Louis, Ill.—6503 St. Clair Ave. (Hy. 50)—Express 7-0200

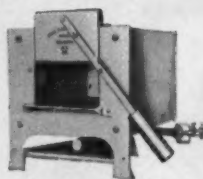
Des Moines, Ia.—327 Insurance Exchange Bldg.—CHerry 4-5347

NOTHING heats like... **GAS**
is more modern than...
is more economical than...



INDUSTRIAL GAS BURNERS & FURNACES

Using Only Low Pressure Gas
for Clean, Fast, Quiet Heat-Up at Lowest Cost!



**BENCH TYPE OVEN
FURNACES** for heat
treating and pre-heating.
Temperatures to 2000° F.



PIPE BURNERS for even heat distribution
in any capacity.



NOZZLE BURNERS for all capacities
up to 1 1/4 million BTU's.



RING BURNERS
for all capacities up
to 500,000 BTU's.

Write today
for complete
"BUZZER"
CATALOG



CHARLES A. HONES, INC.

133 So. Grand Avenue, Baldwin, L.I., New York • Baldwin 3-1110

"BUZZER" Burners & Furnaces for Heat Treating, Melting, Soldering

Elgin's NEW Model 50 Fully Automatic Water Conditioner A NATURAL FOR YOUR MARKET

For soft, rust-free, filtered water —
Automagically!

A complete city and well
water conditioner, Elgin's new Cabinet
Model 50 softens water, removes rust and filters
for sparkling clarity in one automatic operation.

The Model 50 is easy to install and
requires minimum maintenance and
salt attention. A "most wanted" appli-
cance, easily sold on its looks and per-
formance in city and rural areas alike,
it is a natural tie-in with home
improvement plans.

Elgin also produces a sales-mate
for the Model 50—the economical,
semi-automatic Model 60 tank-type
unit. A 3-year guarantee, plus a 10-
year warranty, is furnished on both
units. And Elgin provides you — the
dealer — with sales stimulating mer-
chandising aids and demonstrators to
make your selling job easier and
more professional.



Semi-Automatic
Model 60



Fully Automatic
Model 50

Write for Full Resale Facts TODAY!

Home Appliance Division

ELGIN SOFTENER CORPORATION

243 N. Grove St., Elgin, Illinois

ELGIN
WATER CONDITIONING
SINCE 1908

only about 221 cu in. However, the
meter, if it is not provided with a
temperature correcting device, does
not know this and will measure out
231 cu in. for a gallon.

Table No. 1, "NGAA Standard
Volume Correction Factors for Lique-
fied Petroleum Gases" page 51 of the
Handbook Butane-Propane Gases
gives the factors to correct a gallon
or volume measurement at a given
temperature to 60 deg. F. Instruc-
tions for using the table are given
on page 50.

The chart Fig. 7 "Weight per gal-
lon of propane, isobutane and normal
butane," page 46, shows the weight
per gallon at various temperatures
of the above L. P. gas, at 36 deg. F.
Pure propane weighs 4.4 lb per gal.
Then $2586 \text{ lb} \div 4.40 = 589 \text{ gal}$.
(We assume the 2586 lb you call
tare weight was instead the weight
delivered to the customer.) Was 36
deg. F the actual temperature of
the liquid fuel through the meter?
Now, we also assume you used a
vapor return hose. Maybe you did
not. If you did you returned some
vapors to your truck which would be
accounted for in the weight methods
but not by metering. At 36 deg. F
we would expect the pressure to be
around 58 psig. A volume of 600
gal. is 80 cu ft. But 80 cu ft of gas
compressed to 58 psig would expand
to about 400 cu ft at 60 deg. F and
sea level atmospheric pressure. This
is about 11 gal. at 36 cu ft per gal.

There are several variables affect-
ing the preceding calculations, plus
meter and temperature readings
which could account for 10 gal. in
600 or 1.6 per cent. Suppose, for in-
stance, the liquid was actually at
40 deg. through the meter. It would
weigh 4.375 lb per gal. and there
would be 593 gal. Also, you do not
purchase a pure product in commer-
cial propane and therefore there are
slight variations in weights from the
preceding chart.—Ed.

Steam bath manufacturer

We received several replies
to our question on page 16 of
the January 1959 Letter col-
umn regarding the existence
of an LPG-fired steam bath
manufacturer. The letters ex-
plained that the proper name
is Sauna stove (or Sauna
Kiuas in Finnish). The two
suppliers suggested by read-
ers are L. P. Jobbers, Hoover
Rd., Virginia, Minn., and
Ripley Products, Hancock,
Mich.

POWELL LUBRICATED PLUG VALVES



Powell Lubricated Plug Valve, worm gear operated. Fully enclosed gear housing is a safety feature and protects against injuries and damage from the elements and tampering.

Like all Powell Valves, Powell Lubricated Plug Valves are superior in their field . . . and have many advantages over conventional types of Valves:

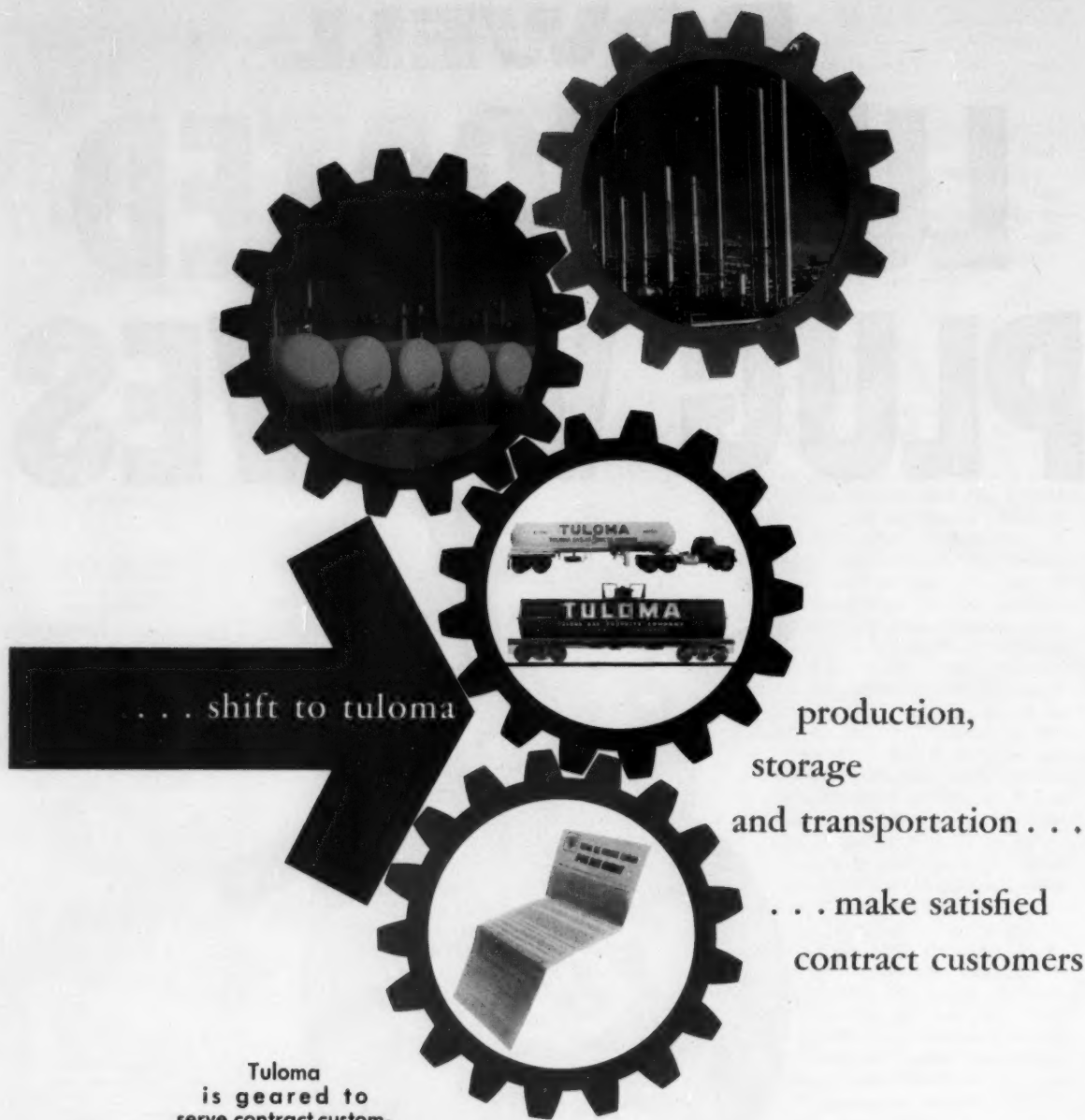
- Simple design: Only three basic parts—Body, Bonnet, Plug.
- Quick, complete shut-off.
- Tapered plug assures positive seating.
- Machined surfaces of plug and body are not exposed in open position.
- Cavity-free straight passage assures streamlined flow.

Powell Lubricated Plug Valves are available in sizes $\frac{1}{2}$ " through 16", depending on the type required—Semi-steel 175 and 200 pounds WOG; Carbon Steel ASA 150 and 300 pounds. Powell can also furnish Lubricated Plug Valves in other alloys on special order.

For all your valve needs, consult your local Powell Distributor—or write directly to us. Send for our new Lubricated Plug Valve Catalog, Number PV-5.

The Wm. Powell Company • Cincinnati 22, Ohio
Dependable Valves Since 1846

POWELL...world's largest family of valves



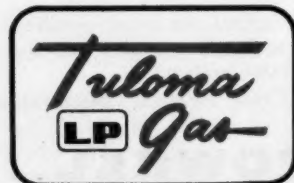
Tuloma
is geared to
serve contract customers
with complete and
dependable service.... To
become the most important
part of our fast moving,
highly efficient organization—
write, wire or call Tuloma
today!

TULOMA GAS PRODUCTS COMPANY

Pan American Building • Phone CHerry 2-3261 • Tulsa, Oklahoma



DISTRICT OFFICES: Williamsburg, Virginia • Moorhead, Minnesota •
Salt Lake City, Utah • Billings, Montana • Des Moines, Iowa • Russell,
Kansas • Houston, Texas • Midland, Texas • El Dorado, Arkansas



BUTANE-PROPANE News

MARCH 1959

beyond the mains



IN RECENT WEEKS, THE NATION'S PRESS HAS PLAYED UP TWO TRAGIC ACCIDENTS INVOLVING LPG—one in Texas and another in Louisiana. In both of them lives were lost. In Bakersfield, Calif., when a transport was involved in a traffic mishap, an ingenious reporter called it a "near miracle" when the overturned tanker "failed to explode." The result: his local story "made" the wire services, and was splashed on front pages from coast to coast.

It takes occasional incidents such as these to make us realize just how vulnerable we are. The unions have recognized this. The Central Conference of Teamsters, in its recent resolution to make a concerted drive for organization of the heartland of America, made safety the wedge by which it hopes to gain its objective.

The CCT has suddenly awakened to the tremendous potential of what it labels--and rightly so--"a booming industry." Heretofore, efforts to tie up this giant with the bonds of unionism have been scattered. Only 42 companies in nine states in the CCT area have been organized, and these contracts were negotiated by 26 locals. Says CCT, "The small portion of organized shops is conducive to relatively inferior contracts... The contracts should be negotiated not in isolation but in cooperation with other locals with similar problems." One way in which this would be done is to "take cooperative action among unions that deal with the same type of company."

What degree of success might the unions reasonably expect in this drive? Well, it's an accepted fact that public opinion is an important ally in getting a drive under way. We can expect the teamsters to make a play for the people's support by carrying the banner for "safety." Says the report, "The union could be of great service not only to the drivers but also the community by organizing LPG drivers and then insisting on improving safety regulations. An LPG accident seldom involves just the driver and the company. Community property is usually damaged, too."

CCT feels its member locals have "performed this service" by writing into their contracts at least some safety provisions. One contract is lauded for "spelling out 20 safety rules that must be followed." But this is not enough to satisfy the conference of Teamsters. It wants industry-wide action. The report concludes, "Improved legislation, together with high union standards, could make this industry safer. Skill and cautious work are required on the handling of butane and propane." Then, in one marvelous flight into logic's outer space, it declares flatly, "In brief, it is a gas utility-type operation."

Are we vulnerable to this sort of attack? If any dealer, anywhere, is operating at anything short of the peak of safety, we are. We are exposing the chink in our armor through which they can force their initial entry. And where will it end? In super-regulation? In conversion of the industry to utility status?

Could be. More ridiculous things than this have happened when professional "do-gooders" went to work.

William Clark

On time on **FIRESTONES!**

They cut costs on LP-Gas deliveries

Whether you operate one truck or twenty trucks, count on Firestone Rubber-X, the longest wearing rubber ever used in Firestone truck tires. It's yours with every Firestone, for extra trouble-free deliveries and lower truck tire costs.

And along with new long-wearing tire rubber, all Firestones bring you Firestone S/F (Shock-Fortified) cord for still more stamina and dependability. No wonder more and more truck owners like yourself find it good business to buy and specify Firestones! Ask about them today at your nearby Firestone Dealer or Store. Headquarters for fast, reliable service!



TRANSPORT*

SUPER ALL TRACTION*

*FIRESTONE T.M.



LOOK FOR NEW LOW COSTS PER MILE WITH LONG-WEARING FIRESTONE TRUCK TIRES

Enjoy the Voice of Firestone every Monday evening on ABC television

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Firestone

BETTER RUBBER FROM START TO FINISH

BUTANE-PROPANE News

By NEIL REGEIMBAL
Washington Editor



BPN

Washington Report

From BUTANE-PROPANE News Washington Bureau

President's budget is an effort to curb inflation

President Eisenhower and Congress are going into a head busting battle this year. It will center on Ike's efforts to curb inflation with a bare-bones, balanced, \$77 billion budget.

Here are the major points of the President's program:

Inflation—the President wants to blunt a possible serious wage-price spiral by matching spending to income. But congressional leaders are planning bigger outlays which could add billions to Ike's program. Prices may be 3 per cent higher or more by year-end if his budget is materially increased.

Taxes—the White House wants corporate, personal, and excise taxes continued at present levels. The President is holding out hope of "tax reforms" in 1960 and major cuts later if his budget recommendations are followed. Congressional leaders are beginning a tax cut study to run into 1960. So there will be no cuts this year.

Small Business—President Eisenhower is not asking for any new small-business programs this year. He wants \$73 million to expand the small business investment program set up last year. But Congress will consider a four-point proposal which includes a tax deduction on up to \$30,000 a year in funds re-invested in a small firm, and deductions for pension plans for self-employed.

Postal—the President's balanced budget rests on several higher fees, including a postal rate boost costing mail users \$350 million more a year. Most of this would come from a new 5-cent first class mail rate.

Housing—The White House-Congress feud here is what will take credit for the program. The President is recommending several actions to make private mortgage investments more attractive. Congressional leaders are pushing for a much larger program, with more public housing and huge urban renewal programs.

Minimum Wage—The White House is so far only vaguely supporting extension of the minimum wage-hour law "so that several million more workers can receive its protection." This probably includes extension only to larger retail stores. Scores of bills have been introduced in Congress to raise the present \$1.00-an-hour minimum wage to \$1.25 or even \$1.50. Unions strongly support these drives. Both may pass.

Labor—A new federal unemployment compensation program raising present state payments and broadening coverage is being pushed by the President. He also urges legislation to "clean up" labor unions and prevent "black mail" strikes.

Farm—Coming on top of an expected dip in farm

income, the President's proposed cut of \$800 million in farm subsidies will run into trouble. Congress may reverse Ike and increase these outlays.

Highways—Some \$3.1 billion (\$600 million more than this year) will be spent on new roads in the new fiscal year. But the President also wants to boost federal gasoline taxes by 1½ cents a gal. for the next five years to meet rising costs.

Eisenhower urging expansion of TVA's empire

Further expansion of the already massive Tennessee Valley public power empire is being urged by President Eisenhower.

The White House this year is firmly behind a move to permit the TVA to sell its own revenue bonds in order to raise expansion money. Similar moves in previous years have barely missed becoming law. Strong White House support could put it through this year.

The President, operating on the assumption that the revenue bond proposal will be adopted, is asking Congress to appropriate \$200 million in "supplemental" funds for the TVA for the rest of the current year, and \$15 million for the new fiscal year.

Meanwhile, Rep. Roy W. Wier, (D), Minn., is sponsoring legislation which would establish a TVA-type power system on the Missouri Valley and its tributaries.

Rep. Wier's legislation (H.R. 1381) a massive 68-page blueprint for a second huge public power empire in this country, probably won't get through in this session of Congress. But it will be a recurring proposal which might someday win approval.

Allocation of fuels during emergency is sought

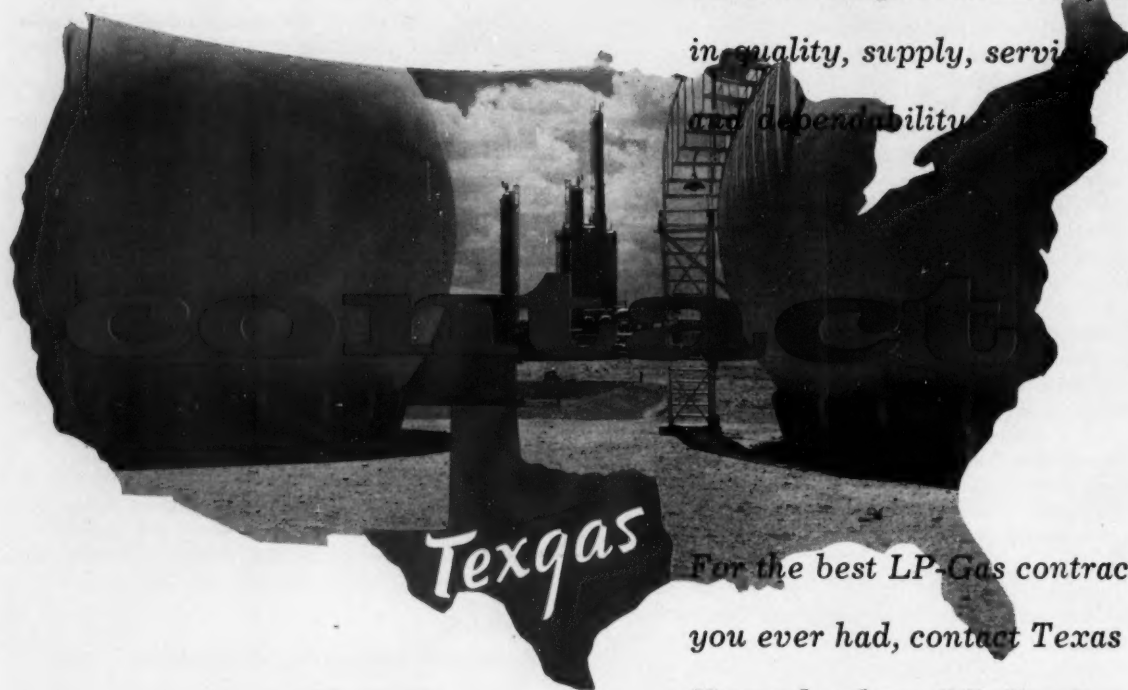
Legislation which would set up in advance a system for allocating fuels during a future national emergency is pending before Congress.

Rep. Abraham Multer, (D), N. Y., is sponsoring the measure (H.R. 1033). It would cover coal, gas and oil and their byproducts, including L. P. gas, giving the President the power to put fuel allocations and priorities into effect whenever he desired by declaring a fuel emergency.

When the President declared such an emergency, he would be empowered to allocate fuel, fuel facilities, and fuel transportation facilities "in such manner and upon such conditions and to such extent as he may deem necessary and proper."

He would be able to control deliveries through priorities, despite outstanding contracts, and also to restrict or control inventories.

Texas Natural is the largest independent producer of LP-Gas, with the largest underground storage facilities and one of the nation's largest tank car fleets. No wonder Texgas leads the field in quality, supply, service and dependability.



For the best LP-Gas contract you ever had, contact Texas Natural, where LP-Gas is not a sideline.

Texas Natural Gasoline Corporation

800 ENTERPRISE BUILDING

TULSA, OKLA. • LUTHER 4-1421

PRODUCERS OF BUTANE • PROPANE • NATURAL GASOLINE

JAMES E. LUBBOCK

ANY L. P. gas dealer appreciates his customers, and Robert M. Fiorella at Imperial Oil Co., Owensboro, Ky., is no exception. But, while most dealers are delighted simply to keep their customers satisfied, Mr. Fiorella actually has his pushing gas and appliance sales for him.

The young dealer manages the L. P. gas department of the Phillips 66 distributorship owned and operated by his father, W. J. Fiorella, and an uncle, Joseph Fiorella. His customer-salesmen technique is just one phase of a consistent, overall promotion program that does the maximum job for Imperial at a minimum cost.

The success of the program is indicated by the growth of the firm's L. P. gas business. In 1949, when Imperial set up the area's first bulk facilities, it served about a dozen customers. Now, roughly nine years later, Imperial has more than 800 bulk customers and about 500 cylinder users, despite the fact that there are four other L. P. gas firms in Owensboro.

Uses direct mail

The backbone of Mr. Fiorella's promotional efforts is, and has been, direct mail. Using material sent him by Phillips Petroleum Co. and the equipment and appliance suppliers, sometimes adding a sales letter of his own, Fiorella has been able to build a hard-hitting promotional packet at a comparatively low cost.

A booth at an annual Fall North-South Exposition in Evansville brings in the names of 300 to 500



Robert M. Fiorella, L. P. gas manager for Imperial Oil Co., Owensboro, Ky., shows secretary Wanda Wancover a set of silver-plated flatware offered customers who sign up for spring heating installations.

Imperial Oil Co. tells about its . . .

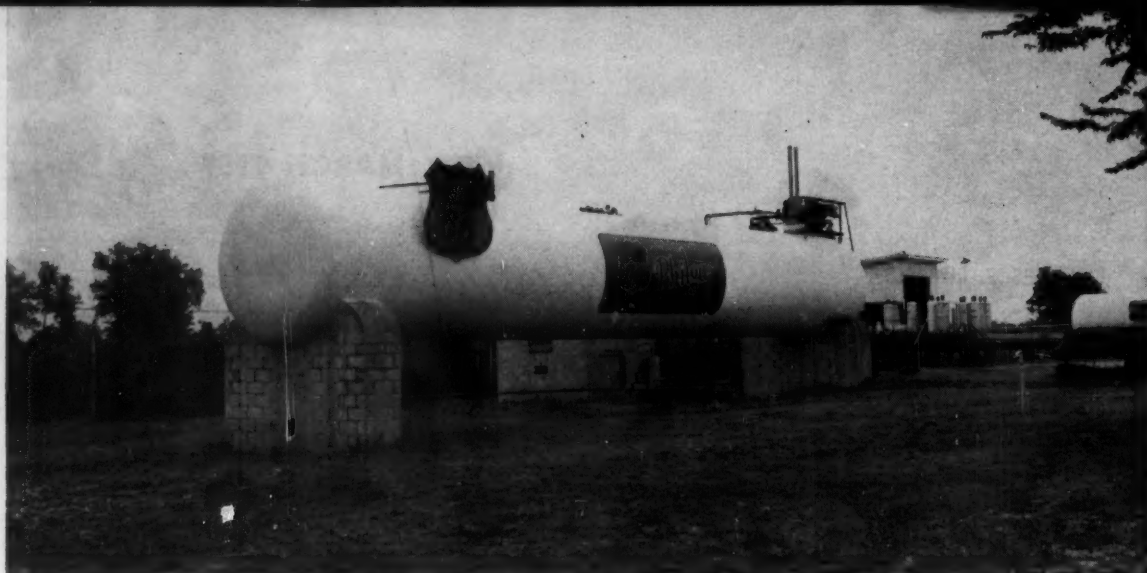
Promotions that paid

good prospects to add to his mailing lists. Feature of the booth is an appliance which is "auctioned" off. Visitors to the booth fill out cards with their name and address, what appliances they own, and their bid for the appliance.

"It goes to the highest bidder," Mr. Fiorella said, "and we get from 75 to 80 per cent of the retail price, plus a fine prospect list which results in 15 to 25 appliance sales."

Imperial's own employees build

**Kentucky LPG dealer goes heavy on direct mail,
uses premiums to sell heating in the spring**



Neat and clean, an advertisement in itself—that's Imperial's 30,000 gal. bulk storage plant at Maceo, Ky., nine miles west of Owensboro.

the booth out of 2 x 4's and crepe paper. Its total cost, including materials and labor, is not over \$50, Mr. Fiorella said.

Additional prospects are sup-

plied by the firm's present customers, who can qualify for free gas by sending in the names of friends or neighbors interested in appliances or gas systems. If the

prospect buys within 60 days, the customer gets 50 gal. of free LPG if he is a bulk customer, or a free cylinder of gas if he is a bottle customer.

Two types of doorknob hangers are used to get customers. When an Imperial customer moves out of a residence, a knob hanger is put on to tell the new occupant that "Gas and appliance adjustment service for these premises was supplied by Imperial Oil Co., etc." Or, if an Imperial employee passes a vacant residence, or a new one outside the utility gas mains, a hanger is used which states, "Gas service for these premises is available from Imperial Oil Co., etc." Both hangers include a brief list of L. P. gas appliances, Imperial's phone number, and a business reply post card, addressed to Imperial, which can be easily torn off along perforations.

Sells heating in spring

Promotion has even helped level Imperial's seasonal load. Spring is a slow time for heating installations, of course, so last spring Mr. Fiorella offered a complete set of silver-plated flatware, or a set of waterless cookware, to customers who bought heating equipment or gas systems for installation between March 1 and June 30.

"About 40 customers made their purchase then," Mr. Fiorella said, "and while they might have bought

IT'S HERE!

Philgas Metered Service

Now You Can Have Gas Service in Your Home for a Small Installment Fee

- NO LARGE EXPENSIVE TANK TO BUY
- NO LARGE QUANTITY OF GAS TO STORE AHEAD
- NO MONTHLY RENT ON YOUR GAS SYSTEM
- NO ADDITIONAL CHARGE FOR PAYING YOUR GAS BILL MONTHLY
- NO BETTER GAS SERVICE — AT ANY PRICE

All These Advantages Mean Greater Convenience for Less Money. Just Check This Line-up of Nationally Advertised Appliances

Roper Gas Ranges	Hardwick Gas Ranges
Hamilton Clothes Dryers	Magic Chef Gas Ranges
Moore Gas Heaters	Philgas Water Heaters
Magic Chef Gas Heaters	Ensign LP Gas Carburetor
Puma-Glass Water Heaters	Delta Blue-Blaze LP Gas Systems

Consult Us About That Heating System For Your Home. Return Coupon Inside for a Survey of Your LPGAS NEEDS—Given Without Cost

QUALITY PRODUCTS



FRIENDLY SERVICE

IMPERIAL OIL CO.

Telephone MUrray 3-3585
Office 8th & Locust Sts.

Owensboro, Ky.

Plant: Maceo, Ky.

Robert M. Fiorella, Manager
Philgas Department

Imperial's direct mail pieces, like that shown here, pack a real sales punch. This one opens up, includes a coupon inside.



A booth like this at the annual North-South Exposition in Owensboro brings in a prospect list of 300 to 400 names. Visitors fill out cards in order to bid on an LPG range.

anyway, the fact that they bought in the spring levelled the load and kept our heating men busy.

While all of these promotional methods are of value to Imperial, and each reaches customers the other wouldn't get, the direct mail program is still the foundation. It is based on two bulk mailings a year, each of between 8000 and 10,000 pieces. These may include just one piece of literature from a supplier, with Imperial's name stamped on it. But, more often Mr. Fiorella sends two or three pieces of literature, plus a sales letter of his own, all in one envelope. These are addressed just to "Boxholder, Route 00, Owensboro, Ky."

"We can't be too selective on bulk mailings, but we do see that good prospects always get literature about appliances they are interested in," dealer Fiorella explained.

Mailings effective

"We know the mailings are effective, because after each one we get many phone inquiries, and our salesman and I find that our sales go up at these times."

In addition to the two big mailings, there are three or four smaller mailings annually—usually not more than 1000 pieces at a time. These go to good prospects, or to people along the routes who aren't customers.

The nature of the material

mailed out has changed a good deal, although the program itself hasn't, Mr. Fiorella said. The first material was educational, sent out to the firm's fuel oil customers, and aimed at overcoming any fears they might have of L. P. gas.

"For the first two or three years, we were building from practically nothing, and concentrated on the educational approach," explained Mr. Fiorella. "Then, in 1951, we affiliated with an active local appliance dealer who was looking for someone to service his appliances. We worked together on a promotion where the dealer paid 75 per cent of the cost of installing two cylinders of gas for customers who bought L. P. gas appliances."

"We then began to go after the appliance sales ourselves. Actually, we still service the dealer's appliances, although we're now in competition with him."

From education to sales

Imperial's promotional efforts have now turned from education to sales—generally pushing a specific appliance. This hasn't meant any change in securing direct mail material. It still comes from Phillips and the appliance suppliers. Mr. Fiorella just uses the type that meets his needs. Nearly all of it has Imperial's name and address printed on it.

The sales letter which Mr. Fiorella writes to accompany the

NOTICE

To New Occupant

GAS and Appliance Adjustment Service for these premises was supplied by —

IMPERIAL OIL COMPANY
Fourth & Locust Streets
Owensboro, Kentucky

MAY WE ALSO BE OF SERVICE TO YOU

for



RANGES • WATER HEATERS
CLOTHES DRYERS • ROOM HEATERS

For Prompt Courteous Service

— CALL —

L-146

MURRAY - 3-3585

or mail the attached card

BUSINESS REPLY CARD

From Chain Form No. 61, Owensboro, Kentucky

IMPERIAL OIL COMPANY
Fourth & Locust Streets
Owensboro, Kentucky

Please Print Name and Address

Please Print Name and Address

This card, hung on the doorknob of a home which an Imperial customer has vacated, brings in a new customer to replace the old one.

literature is generally a composite of information from many mailing pieces. He tries to get in a little on all appliances which aren't covered in the more specific sales material.

Imperial's newspaper and radio advertising have been cut as the firm has turned from education to



Above is a real load balancing tank. This 1000 gal. unit supplies fuel for farmer's irrigation pump during spring and summer, then is moved three-quarters of a mile to heat his home in the winter.

Right, a view of Imperial's well-stocked showroom.



LPG dealer Fiorella enters his office to start another day of solid promotion.

item promotion. Considering their cost, they aren't as effective for a sales pitch as direct mail, Mr. Fiorella believes.

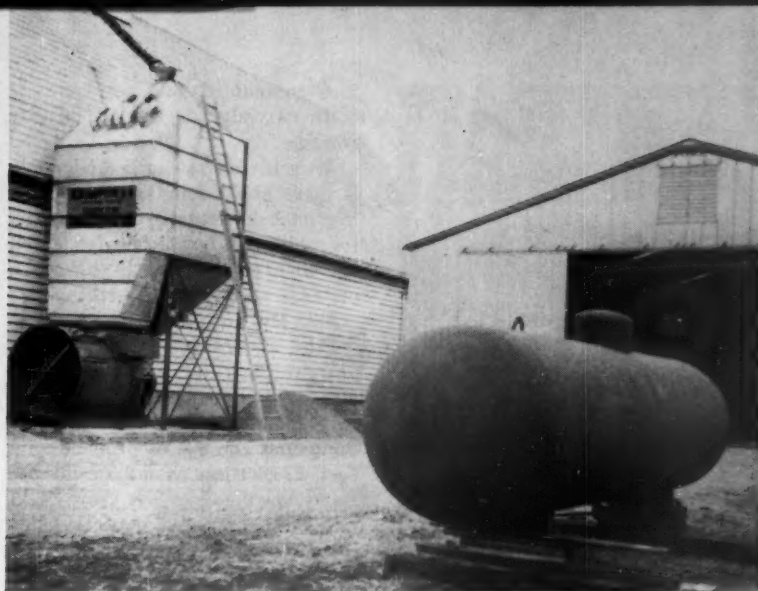
Imperial has built up a comparatively diversified customer list as a result of its continuing promotion. Heating and appliance users top the list, of course, with many now on metered service. They are followed by commercial broiler house operators, who help even out the seasonal load. Baby chicks need a temperature of 90 deg. F for the first few days, Mr. Fiorella said. So, the broilermen use a good deal of L. P. gas in the late spring and early fall, when home heating units are usually turned off. They are also good customers all through the winter, of course.

Farmers along the Ohio River, who use L. P. gas for irrigation pump motors, also do their bit to level the load. Irrigation use is increasing since the farmers have learned that gas can be cut off "automatically" at a certain time. One of Imperial's customers accomplished this simply by installing a 23 gal. cylinder between his bulk tank and the pump motor. When the farmer quits work for the night, he turns off a valve between the tank and the cylinder. But, the motor continues to run until it uses up the gas in the cylinder—usually around 11 p.m., or midnight.

Oil drilling rigs, sawmills, fork-lift trucks, a gravel pump, and farm tractors round out Imperial's customers and help balance the heating load.

For the firm's last Exposition booth, Mr. Fiorella decided that something should be done to promote farm tractor use. He borrowed a converted tractor from a farmer-customer, and displayed it in the booth, along with the appliance being auctioned. But this resulted in two tractor conversions, which was a disappointment to sales-minded dealer Fiorella, and convinced him that an educational campaign is needed among tractor operators.

So, if Imperial's past success is any indication, it won't be too long before there'll be a pretty sizeable upswing in farm tractor conversions in the rural areas around Owensboro, Ky. ■



During the winter season, while the farmer sits around the fire awaiting spring planting, he has time to plan for the coming harvest. This, then, is the time to sit down with him and sell him on L. P. gas for the coming season. And one important item not to overlook is crop drying. Here, in the experience of one farmer, is the story in a nutshell.

A 1000 gal. tank supplies LPG to this dryer while providing a heavy load during the right time of the year for the LPG dealer.

BPN CASE HISTORY

Illinois farmer profits from mechanical crop drying with LPG

WEATHER is one of the biggest factors in determining the success or failure of a farmer's efforts to raise crops. The farmer is most thoroughly a pawn of the weather around harvest time. Even after corn has matured the farmer often has a difficult decision to make. Corn dries much faster in the field than it does in the crib. But, if the farmer decides to let the corn stand and dry in the field, he takes the risk of bad weather setting in. If this happens he could lose much or possibly all of his crop.

On the other hand, if the farmer decides to harvest early while the corn's moisture content is high he runs the risk of having it spoil in the crib. If it does not dry to the required level, the corn cannot be sold for top prices.

Robert Muirhead's farm near Plato Center, Ill., had a crib with a storage capacity of 10,000 bu of ear corn. Storage space for an additional 10,000 bu was needed. That is, the additional space would be

needed if the weather around harvest time was cooperative. He was dependent on the weather.

Buys crop dryer

Mr. Muirhead decided to reduce his dependency on the weather by investing in a mechanical, L. P. gas-fired, grain dryer. This would enable him to pick the corn early when its moisture content was high enough to considerably reduce field losses. The cost of mechanically drying the corn would be paid many times over by the reduction of field losses alone. Since the use of a dryer greatly increases the possibility of a bumper crop, the need for additional storage was also increased.

Because the dryer made practical the use of a picker-sheller and shelled corn storage, Mr. Muirhead scrapped his plans for building a new crib. Instead he bought a John Deere picker-sheller and a Butler bin which has a capacity of 29,000 bu of shelled corn.

At first glance this might seem

like a tremendously expensive substitute for the 10,000 bu ear corn storage crib. Actually, the combined cost of the Butler bin and the Campbell dryer was just about what the crib would have cost. In addition, the work can now be done faster, earlier in the season, and with less labor and risk. The corn can be sold on the early market or stored safely until the price is right. If by getting the crop out of the field a week or two early a crop-flattening storm is avoided, the equipment could pay for itself in one season. When the bin is not being used for grain storage it can easily be put to use as a garage, shop or whatever is needed.

When choosing the site for his dryer Mr. Muirhead took advantage of existing facilities. The dryer was installed adjacent to the original twin crib so as to use the crib's driveway and vertical elevator for fast and easy loading of the dryer. The bin was built near enough to the dryer so that the dried grain could be augered di-



Everything is mechanical as the picker-sheller pours corn into a dumptruck for hauling to the dryer.

rectly from the dryer spout to the bin. Distribution of the grain in the bin is accomplished with a motor-powered auger that is suspended by a chain hoist from the bin's framework.

Gets into field early

The present procedure at the Muirhead farm is to get into the field as soon as the corn's moisture content is right for good machinery performance and small field loss. The John Deere 45 combine with a No. 10 corn attachment is

well matched to the dryer's capacity. The combine will take two rows of corn and has a holding bin capacity of about 40 bu of shelled corn. Trailing wagons are therefore unnecessary and a dump truck at the end of the rows is used to take the corn from the combine to the elevator of the twin crib. The corn is dumped and elevated in the crib. It flows by gravity into the top of the dryer.

When the dryer has a full batch, about 350 bu, L. P. gas goes to work. The corn is dried to a mois-

ture content of 12.5 per cent. It is then ready for market or safe storage.

Once the operation is underway, it takes about four hours, depending on the wetness of the grain, for the transformation from wet ear corn in the field to safe 12.5 per cent shelled corn in storage.

Mr. Muirhead is definitely sold on the advantages of owning his own dryer. He is particularly pleased with the low cost and absence of maintenance which accompanies the use of propane as a fuel. It cost less than 2.5 cents per bu to dry the crop last year. Next year Mr. Muirhead expects to do some custom drying.

Provides good LPG load

The fuel for the drying operation on the Muirhead farm is supplied by the True Blue Oil Co., Plato Center, Ill. True Blue owner Charles Homuth now has two other drying customers. From the reactions of these customers Mr. Homuth has concluded that this market for L. P. gas will expand rapidly. He believes it to be an exceptionally good load, well worth developing.

Even though the corn drying load comes late in the year, near the beginning of the heating season, it generally does not create a load balancing problem because the first fill can be made several weeks early if necessary. If the season is early, the gas consumption helps build up the summer volume, thus increasing the winter allotment. If the season is late, the load generally balances itself unless the gas storage is very small and the crop unusually large thereby prolonging the drying season.

In previous years Mr. Homuth supplied the Muirhead farm with a 1000 gal. tank on short term arrangement. The tank was delivered and filled before the season began. When the operation was completed, the tank became available for another customer.

Because propane proved so satisfactory for the drying of his crops, Mr. Muirhead decided to use it to heat his hog farrowing barn. Now the tank is leased from True Blue and remains on the farm where it serves as storage for both purposes. ■



The business end of the dryer showing the automatic controls and the burner which uses about 30 gal. of LPG per hour at peak demand.

A desert oasis is a real oasis when it has L.P. Gas



Palm trees alone do not an oasis make. It takes an L. P. gas tank, too. This tank, one of six at 29 Palms Inn in California's high-desert country, provides guests with all the comforts of home.

MARTIN A. BROWER • Managing Editor

IN order to be competitive, a modern motel must provide guests with every possible comfort at the lowest possible cost to the motel owner. Clean, fast, automatic heat; plenty of hot water— instantly; a comfortably-heated swimming pool; and fast, clean, automatic cooking are all requisites. L. P. gas is the logical answer anywhere beyond the natural gas mains.

California's desert country is loaded with modern resort motels and everywhere the visitor looks he sees L. P. gas tanks. Whether

the motel is new on the scene or is an old tradition, L. P. gas is the probable fuel.

An institution

Ask any old timer where to stop for a night or a week when motor-ing in the area of Twentynine Palms, Calif., and the answer will almost certainly be the 29 Palms Inn. Located in the high-desert country 143 miles east of Los Angeles, the Inn is situated on 75 acres of Washingtonia Palms, Wil-lows, Mesquite, and Smoke trees. The Inn is an institution among

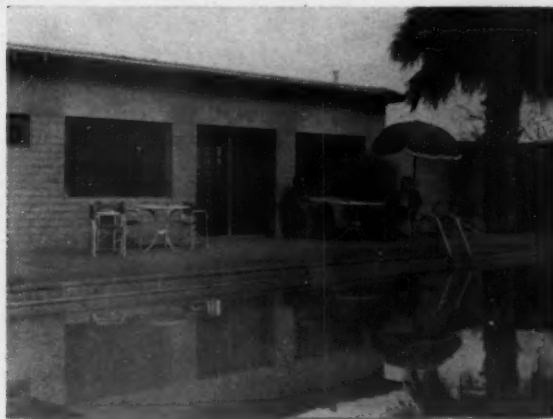
Southern California motorists.

At 29 Palms Inn, L. P. gas— fed from six bulk tanks scattered about the 75 acres—heats the cot-tages, provides hot water, heats the swimming pool, and cooks meals for guests in the Inn's own restaurant.

Inn owner Robert Van Lahr ad-mits that LPG was not always used for heating. When he bought the Inn in 1940, the fireplaces which are a part of each cottage provided the heat. To keep warm, guests had to keep feeding the wood. Not only was this incon-



LeRoy R. Lashmett, district manager for Petrolane Gas Service, checks the amount of LPG in this 288 gal. tank which supplies the Inn's restaurant with 350 gal. of LPG per month. This fires a range and char-broiler.



Guests won't stop unless you offer a heated swimming pool like this one at 29 Palms Inn, says Inn owner Robert Van Lahr. The 20 x 40 ft. pool has a 350,000 Btu heater, uses 550 gal. of LPG per month during the season.



A 27,000 Btu LPG-fired wall heater provides thermostatically-controlled heat for two little guests in one of the adobe cottages.

Inn owner Van Lahr tries his hand on the LPG-fired restaurant range. The LPG-fired char-broiler is on the left.



One of the Inn's adobe cottages.

venient, but wood became scarce during World War II. So Mr. Lahr installed oil heaters.

The oil heaters were a chore to operate, dirty, and guests complained of the oil odor. As soon as the War was over and appliances were once again available, the oil heaters were tossed out in favor of automatic L. P. gas units. The adobe guest cottages now have thermostatically-controlled LPG wall or console heaters. Each also has an individual L. P. gas water heater.

There are 20 units in all. Fourteen of them have been converted to LPG, and the remainder will be changed over as soon as possible.

The heated 20 x 40 ft swimming pool was added during the 1949-50 season. How valuable is the pool heating system to the motel? "We wouldn't be without it," says Mr. Van Lahr. "It used to be that potential guests would call in and ask if we have a pool. Now they ask if we have a heated pool. If we would have to say no, many would take their business elsewhere."

The 350,000 Btu pool heater has an average fuel consumption during the heating season of about 550 gal. per month.

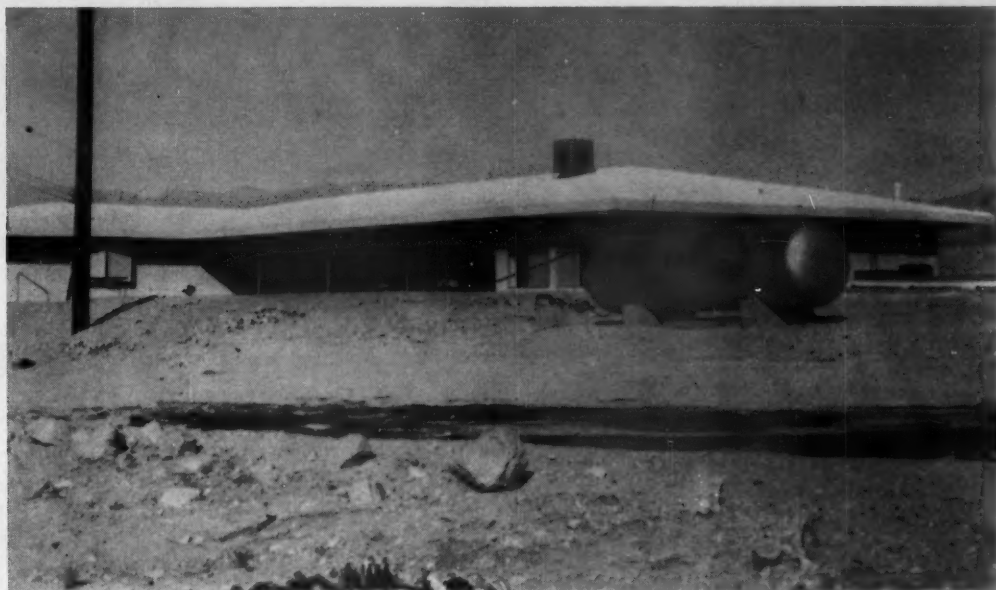
Besides heating water, the restaurant uses LPG for a range and a broiler. Average monthly fuel consumption for the kitchen is 350 gal. per month.

One of the most beautiful parts of the Inn is owner Van Lahr's own home where he resides with his family. The modern home is all L. P. gas.

Total annual consumption of the 29 Palms Inn, according to LeRoy R. Lashmett, district manager for Petrolane Gas Service Inc., is 12,000 gal. A pretty neat account. Storage is in a 288 gal. tank for the kitchen, a 480 gal. tank for the swimming pool, a 288 gal. tank for the home, and three 162 gal. spheres which supply the cottages.

Desert Hot Springs, Calif., is another fertile area for LPG. For a complete report on one motel in the area see page 33.

A desert oasis . . . Everywhere you look in the desert it's all-LPG



Not yet open for business, but the LPG tank stands ready to serve this motel.

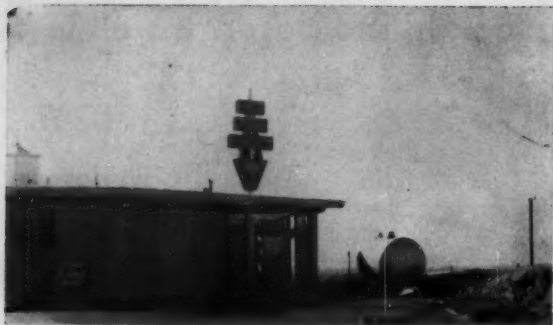


Left, a 250 gal. tank cares for Bertram's.

Bottom left, two LPG tanks fill the all-gas needs of Monte Carlo.

Bottom right, The Mecca's bulk tank is concealed with a lattice fence.





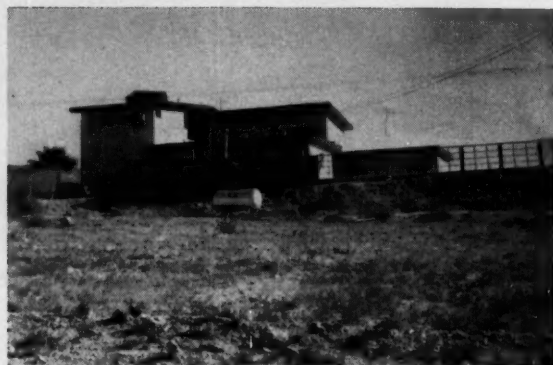
The Little Admiral Inn has its own hot springs well (see sign), but it still needs LPG (see tank).



Like all the others, Pleasant View Lodge puts its LPG tank in front, where everyone can see it.



A 500 gal. tank supplies the Highlander



Lorane Manor seems to use it, too.



Left, two 500s supply LPG to the Burwood Motel. Below, patrons of the Desert Highlands get hot meals—fast—with LPG-fired equipment.





A newcomer

Desert Hot Springs, Calif., is piped for natural gas—downtown. But go about two miles out of town, and the mains end. And it is out of town that the dozens of motels that make this desert community a big resort are located. One such motel is Broadview Lodge.

Only three years old, Broadview Lodge, like almost every other motel in this community, is all-L. P. gas. The sleek 1000 gal. Suburban Gas Service tank supplies LPG for heating the modern rooms, water heating, pool heating, and cooking in the kitchenette units.

Burwood has 12 units plus manager's living quarters and five of the units have kitchens. Total consumption during the season is 50 gal. per day.

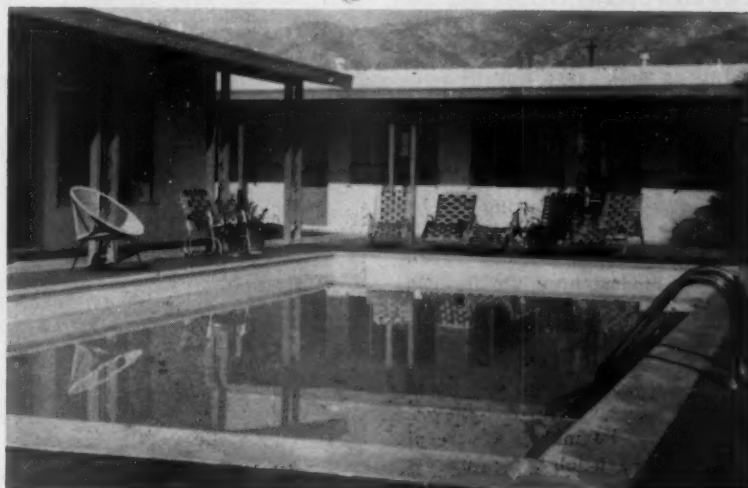
"L. P. gas is the only fuel for me," stated manager Fred Buhl. "It has every advantage and no disadvantages." Manager Buhl was in charge of a trailer park before coming to Burwood Lodge so was pre-sold on LPG.

Whether new or old, every motel beyond the mains is a prospect for L. P. gas. The advantages are great for the motel operator—and for the L. P. gas dealer. ■

It may be in the middle of the desert, but it still needs heating. This is the LPG-heated pool at Broadview.



A look inside one of Broadview's units shows the LPG-fired wall heater, the LPG-fired range, and the sink into which flows LPG-heated water.



Higher-priced LPG can be sold against cheaper fuel oil

WILLIAM W. CLARK • Editor



Donald Witmer uses the cost survey to show a prospect what fuel costs he might expect with gas heating.

HIGHER-PRICED LPG can be successfully sold against cheaper fuel oil—IF you do the right kind of selling job and pick your househeating customers with care.

C. W. Witmer, Pyrofax dealer in Soudersburg, Pa., is doing it, and that's the formula he is following.

The key is high-level, thoroughgoing, workmanlike selling of a type that is as quick to eliminate prospects of only marginal desirability as it is to take positive steps to put over a sale.

"We try to discourage prospects if we aren't pretty certain that the kind of gas installation they want is the kind that will satisfy them and us as well," says Eugene Witmer, son of the owner and the company's principal salesman. Witmer screens them on these bases:

Is the house of a type where a satisfactory job of heating can be done economically?

Can the prospect really afford to pay a modest premium for gas heat as against oil?

Is he "good pay?"

A person who cannot measure up on all of these counts is not a good prospect, Witmer believes. Accordingly, he makes a careful analysis of each job before under-

taking it, and explains to the prospect the cost probabilities, which are:

Gas for space heating will probably cost 10 per cent more than oil.

Gas for central heating will cost 20 per cent more than oil. However, this will be partially offset by lower electric bills, no yearly furnace cleaning (this usually runs at least \$15), elimination of the \$50 to \$60 investment in a fuel tank, and the lower first cost.

And, on the other hand, bulk gas service made possible with househeating will cut rates for cooking and water heating.

These somewhat indefinite fig-

ures are pinned down into an actual cost survey, which Witmer uses effectively. This survey is a compilation of annual gas bills for existing househeating customers, tabulated by months. A dozen typical customers have been chosen, and a cost case history prepared for each. Here are a few random samples:

1. Three-room apartment, with 50,000-Btu floor furnace, water heater, and range—annual bill (tabulated by months), \$257.80.

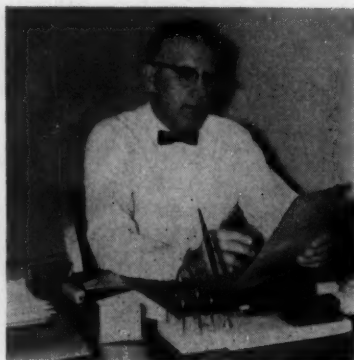
2. Three-room apartment, with 40,000-Btu kitchen heater (gas-and-gas range), and bathroom heater—annual bill, \$183.23.

3. Five-room ranch-type home, with range, water heater, gas refrigerator, 100,000-Btu central heating unit—annual bill, \$321.29.

4. Five-room house (three downstairs, two upstairs), with 50,000-Btu space heater and range—annual bill, \$247.57.

These data, compiled during the winter of 1956-7, are made up into sheets and inserted in the selling catalog. They have proved to be an effective selling tool — especially for the type of selling job the Witmers have set out to do.

C. W. Witmer is a fairly typical



C. W. Witmer, Pyrofax dealer.

small dealer, with 2100 customers, located in a moderately prosperous farming area where small dairies predominate. It's the heart of the Pennsylvania Dutch country, on the eastern edges of Lancaster, some 75 miles west of Philadelphia. Here dwell the Amish people, whose strict religious tenets forbid them the luxuries of most modern conveniences (although some have yielded to the advantages of gas for certain uses). Here also dwell the Mennonites, who have embraced modernity yet are deeply religious, conservative in dress and manner, and are still primarily an agricultural people.

The Mennonites comprise some of Witmer's best and most loyal customers.

Witmer is a pioneer among Pyrofax dealers, having been established for more than a quarter of a century. For many years, he served gas in cylinders only, refilling at the Pyrofax plant in Norristown, some 45 miles away. But when Pyrofax began to encourage bulk sales, he was one of the first to comply. In early 1956, he began a heavy solicitation of commercial accounts, particularly restaurants and institutions. With acceptance for LPG in lift trucks growing rapidly, he snagged two rich accounts at Lancaster—Hubley toys and RCA. The former uses LPG in a rack coating oven as well as in its mobile equipment, so the base load is steady and considerable.

Such year-round volume loads as these gave him a base upon which to add househeating accounts. With little in the way of off-peak loads to balance out the 12-month demand, he has proceeded with deliberateness but not timidity.

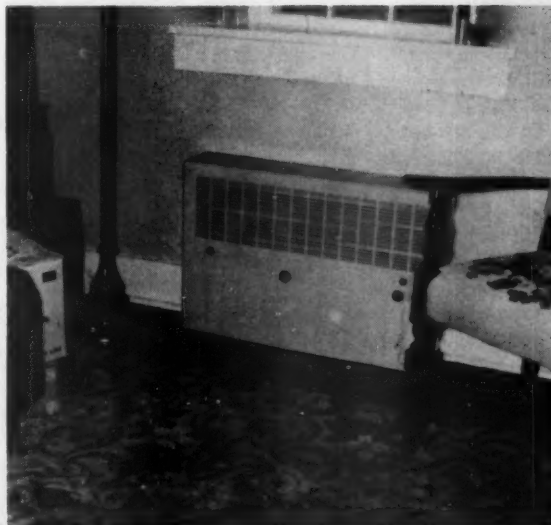
For the most part, his cultivation of this market has been among existing customers. This has made the selling job easier, since he can point to savings on present usage—cooking and water heating, for example—under the bulk rate.

Most of the homes served are large, rambling stone farmhouses. Many were built in the days before central heating was known.

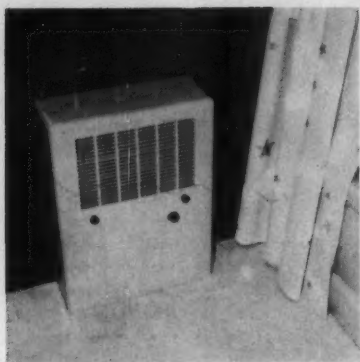


Here is a typical Witmer installation—an old farm house subdivided into apartments, heated by individual space heaters. Central heating in a house of this type would be prohibitive in cost. Despite the size of the home and the severity of the winters in the area, space heaters have proved highly satisfactory as well as economical.

One of the newest and the best of the Witmer central heating systems is installed in the Hess home at Atglen, Pa. Hot water for both the heating system and other household needs is provided by a Weil-McLain boiler located in the basement.



Radiators in the Hess home are new American-Standard type. This one located in the living room is a double unit with dual fans and separate sets of controls for each. An identical double unit is also located in the kitchen. Both of these units on the main floor, are controlled by a single thermostat.



Upstairs in the Hess home are three single units, one in the bathroom as shown and one in each of the two bedrooms. These are also controlled by a single thermostat.

Later, because of the tremendous cost involved in heating the entire house uniformly, most homes turned to space heating of the main living areas, using coal—primarily—as the fuel.

A large share of the Witmer's selling efforts have been concentrated in this field. No. 1 seller to date has been floor furnaces, although console heaters—particularly—and wall models have also sold well.

Another reason for pushing direct heating equipment is that many of the older farmhouses have been subdivided into duplex or triplex apartments, and each tenant's heating problems are treated individually.

A typical installation of this type is a farmhouse which has been split into two units. Downstairs is a single large room, used for cooking and dining. Upstairs are three rooms, the living room and two bedrooms. In the kitchen is a single Brilliantfire 30,000-Btu console. The living room, adjacent to one bedroom, has a 50,000-Btu Siegler console, which gives ample warmth for the 500-plus sq ft room and the bedroom as well. (The second bedroom is at present being used only for storage, so requires no heat.)

The first bedroom has an additional source of heat, as needed: an open register in the ceiling of the kitchen, located directly beneath this room, carries warm air up from the Brilliantfire.

Both heaters are thermostati-

cally controlled, as are most Witmer installations (They're selling as much *quality* as they can, within the tenants' budget limitations.) The Siegler in the bedroom is controlled by a thermostat on the electric circuit. The Brilliantfire has a thermal unit. (During the rugged winter of 1957-8, the thermal unit proved a double blessing—when the power went off in one of the season's worst snowstorms, the Brilliantfire continued to operate. Pouring warm air through the ceiling register, it kept both kitchen and bedroom comfortable.)

Another excellent market, says Witmer, has been in add-ons. The farmers in the area run to large families, and builders have been busy adding spare rooms. Where the house is equipped with central heating, usually the least expensive and most efficient way to heat these spaces is with an auxiliary heater.

There is, however, a growing market in the area for new central heating with LPG. Witmer has worked closely with representatives of leading manufacturers to engineer some highly satisfactory installations. One of the newest and most ingenious is the hot water system recently put into an old stone farmhouse belonging to a dairy farm family in Atglen, Pa.

The farmhouse is of two-story construction with full basement. In the basement, a Weil McLain boiler rated at 114,000-Btu per hour was installed. Five radiators were put in, one in the living room and one in the kitchen (both on the first floor); one in each of the bedrooms and one in the bathroom (all upstairs). These are new American-Standard units, with variable speed fans. The kitchen and

living room units are double size with two fans having separate speed controls.

The kitchen and living room units are controlled by a single thermostat, located in the latter. Upstairs, a thermostat located in a walk-through bedroom controls all three radiators.

The flow of air from each unit can be regulated for fast warmup simply by turning the fan speed dial. This gives a modulating effect which is particularly advantageous on a cold morning.

Cold air returns are located in the lower section of each radiator.

The boiler gave Witmer an extra load, since it supplies all the hot water needs, replacing an electric water heater.

This job was done as part of an overall modernization of the old home. Previously the entire heating job had been done with two wall furnaces, one in the living room and one in the kitchen. Another aspect of the remodeling job is a sparkling new kitchen with built-in gas oven and top burners. All in all, it helped Witmer to a nice, comfortable load, which is being supplied from a 500-gal. tank.

The Witmers—particularly son Donald—do their own installing of direct-fired heaters. But when it comes to central systems, they work cooperatively with heating contractors. Most of the system sizing and engineering is done in cooperation with the real experts—the representatives of the manufacturing company involved.

And so the load grows—not sensationally, but steadily and conservatively. Which is typical of the Witmer family. They're that sort of people. ■



The Hess home is truly an all-gas home now that it has been modernized. A completely new u-shaped kitchen is built around the drop-in top burners and the built-in oven broiler combination.

How to Protect Your Capital AND MAKE IT GROW

By J. GORDON ALLARD

Should you sell stock, sell for stock, or merge?

THERE is a natural tendency on the part of all of us to regard the owner of a highly successful business enterprise as a person who has no problems. He has made the grade; he and his family have no difficulties as far as their future security is concerned. We feel that he's been lucky and now all he has to do is sit back and take it easy. All of these things are, more often than not, far from the truth.

The attainment of real and permanent security is an extremely difficult thing to do. In the face of rapidly-changing economic conditions, it can only be accomplished through very careful and highly competent planning.

The tax structure alone of modern society has made the creation and perpetuation of an estate to give security to the family group so difficult that without expert and capable planning the individual and family might find themselves in *anything but* a secure position.

Many individuals who have been able to build large businesses drift along under the illusion that they have all the security they need. But often times they fail to realize that they haven't as yet taken care of their partner, Uncle Sam, who will be standing silently by waiting to collect his full share of the profits. Then when a tax expert points out to the owner what must be paid to the government upon death of the owner or liquidation of the business interest, the individual wakes up to find himself not nearly so well off as he thought he was.

In our last article we listed five principal security considerations with which most owners of successful businesses are concerned and discussed five of the more pressing problems which make the realization of these securities difficult.

Assuming our L. P. gas business has been and is operating within the required boundary lines (described in our first article) to make it sound and profitable, what possible courses of action are open to us now? How can the successful businessman protect and safeguard his capital accumulation, realize his profit and obtain the security he desires?

Three roads to security

Although there are many different steps an owner may take to conserve and increase his assets, there are three general courses of action open to him which should result in providing him with the

maximum of security and to a large extent solve his paramount problems:

1. He may attempt to sell his business to a larger company engaged in the same business. For the L. P. gas dealer, the number of possible purchasers is decidedly limited, especially if his business is a reasonably large one. The LPG industry is not as yet sufficiently well organized or mature to interest many buyers outside the industry. This is not necessarily true in other fields.

2. If his company is large enough (worth at least \$1.5 million or \$2 million) and if it generally contains the necessary requirements for sound and successful public financing, he may attempt to interest investment bankers who may, under the right circumstances, provide him with a public underwriting by selling shares of stock in his company to their clients.

PART THREE

Three courses of action a successful L. P. gas dealer may take to provide himself with the maximum of future security.

A detailed discussion of one of these courses of action—that of selling a dealership.

Three general ways in which an L. P. gas dealership may be sold.

A discussion of each method showing the advantages and disadvantages and the tax consequences.

3. If his company is too small for a public underwriting, and he either does not desire to sell to a larger company or perhaps has no buyers on desirable terms, then he might attempt to form a group of owners of sound and profitable businesses who are in the same

"The driving force of our economic life" is now large business and no amount of nostalgia for the good old days can change that fact. We can't live in a world of economic folk dancing and basket weaving and simultaneously in the world of the big productive machine."

position as he is. Such a combination of individual companies could be large enough to obtain the interest and backing of investment bankers and large enough to justify a public underwriting thus enabling the individuals involved to accomplish their objective.

Hard to "go it alone"

If an owner does not desire, or perhaps is not able to, follow one of the above three courses of action, then he must remain more or less as he is, hoping that he will be able to keep up with rapidly-changing conditions in a rapidly-expanding economy, and trust that he will be able to successfully cope with the many problems which confront a small businessman.

To "go it alone" is becoming increasingly difficult under our present economy and it is extremely difficult to attain real and permanent security. Today, small-scale business is an integral, essential part of our society, but it is certainly *not* the norm. The driving force of our economic life is now large business and no amount of nostalgia for the good old days can change that fact. We can't live in a world of *economic* folk dancing and basket weaving and simultaneously in the world of the big productive machine.

To emphasize the necessity for big business in a big and growing America, just contemplate for a minute the following figures: Every

day 11,000 babies are born in America—4 million every year. Every minute three more brides begin their careers as wives and buyers, needing all the things that make jobs for the rest of us. We will be needing more food, more clothing and more houses. To meet growing needs, our current annual building rate of 1.2 million homes will probably have to double by 1975. It's a \$100 billion opportunity, and remember, our prosperity curve has always followed our population curve.

Selling the business

Let's now examine the first plan of action mentioned above, i.e., to sell your business to a larger company. We will assume that you have decided, after careful consideration, that this is a move you should make for a variety of reasons; that your business is a desirable one; that there is a qualified buyer with whom you have had preliminary talks and it appears reasonably certain that a mutually satisfactory price for the business

"An all cash deal done in this manner is by far the simplest way to liquidate a business interest and contains a minimum of risk and speculation. . . . You get your money, pay your taxes, obtain clearance from the Internal Revenue Department, and you are through with the transaction once and for all."

can be agreed upon. Granted, it may require a long period of time before this point has been reached as usually the seller and buyer have very different ideas as to what the business is worth.

Although to sell your business is obviously the simplest procedure of the three possible courses of action outlined, the problems created by such a move often make it difficult for an owner to reach a final decision.

Problems of selling

One of the first questions an owner of a business would ask himself is: What will my personal in-

come be after I sell the company? Will it be sufficient to maintain my customary standard of living?

Obviously, an owner's income from a business along with the many expense advantages enjoyed provide a far greater net amount than that received exclusively from investments. Consequently, he must be prepared to take a substantial reduction in his personal income. The owner should figure exactly how much would be left after taxes, and then figure what the income would be at 4 per cent on that amount. Your investments would no doubt yield more than 4 per cent even at today's seemingly high prices, but we will make our calculations conservative.

Perhaps this cut in your income will be too great with the resulting decision that you could not afford to sell unless you continued to work. This problem then may be resolved provided the prospective purchaser desires to retain your services in a managerial capacity. Perhaps there is a much bigger position in store for you—bigger than that of simply managing what was formerly your own business. Or perhaps you have an opportunity to be active in a business in a different field. These factors will be important ones in making your final decision to sell or not to sell your business.

Let's imagine at this point that you have satisfactorily resolved your own problem as far as income is concerned. Your next consideration would probably be for your key employees. Would the sale of the company increase or decrease their opportunity for advancement and the attainment of security for themselves and families?

As a rule, an employee will have much more opportunity in a larger organization, particularly if he has outstanding capabilities. Also, large corporations have pension and retirement plans, stock option plans for key employees, etc., most of which are not available in a small company. Very often a buyer will be very desirous to have the employees remain and will sometimes enter into an employment contract with them, although this procedure is not customary except sometimes with top executive personnel.

How to take payment

Assume now that you as the owner have worked out with the prospective buyer all the pertinent details up to this point, so that now you are able to make the definite decision to sell. The next question is which is the best way to receive payment for your company.

Generally speaking, you will have only three choices:

1. You may make a complete sale by taking *all cash*, or if you have the opportunity, you might take *part cash and part stock* of the buying company.
2. You may make a complete sale by taking as payment for your company *all stock* in the buying company. This method is simply an exchange of stock between the two companies.
3. You may make an installment sale by accepting less than 30 per cent of the total sales price as a down payment, which is usually all cash.

Obviously, there are many ramifications and variations within the framework of these three general methods of making a sale. Each individual case will be different depending upon the size of the deal, the general financial position of the seller, what his objectives are, what investment opportunities are present at the moment, what the tax consequences are and how the seller is prepared to meet them, his age, state of health, etc. Consideration of all these factors and possibly others will determine exactly which general method should be followed.

Case history of a sale

Before we go any further with this discussion it might be well to look at the case history of an L. P. gas dealer who sold his relatively small business, lest some readers might think that all of this is not for them as they are too small; that they couldn't possibly sell their business and come out with anything; that all of this is only for "the big boys."

About eight years ago this comparatively young dealer had an opportunity to sell his business to a larger corporation for \$50,000. Ob-

viously, his was not a very large operation. He chose the second method of payment and took all stock in the larger company which was a tax-free transaction. The corporation's stock was then valued at \$5 per share, so he received 10,000 shares.

He made the deal in this manner for two principal reasons: he didn't need any money as he was going to remain active in the management of the larger corporation and his salary would be equivalent to what he was able to take out of his own business for himself; and,

"Perhaps this cut in your income will be too great with the resulting decision that you could not afford to sell unless you continued to work. This problem may then be resolved provided the prospective purchaser desires to retain your services in a managerial capacity."

he had great faith in the growth potential of the corporation and in the ability of its management.

His faith and foresight have paid off handsomely for today, only eight years later, the quoted value of his shares is in excess of \$375,000 and the dividends are \$15,000 per year. His capital has increased by 750 per cent!

This particular corporation has been outstandingly successful and its growth during the eight year period has been tremendous, *but no more so than literally hundreds of other corporations in other fields.*

Had this young man kept his business he could not have possibly increased its worth by 750 per cent on his own and still be the sole owner. There just wouldn't be that many customers in his territory to begin with. The only way he could have rapidly expanded his business would have been to borrow from commercial banks and with the money acquire other L. P. gas operations. Being as small as he was and in a rural area he probably could not have obtained too much support from the banks.

By doing what he did, this dealer has attained a great deal of security for himself and his family.

"... as a general rule, you should not accept stock unless the corporation is a public one, the stock has a wide, stable and ready market ..."

What he owns has a quoted value every day so there is no question as to what it is worth. He can sell some of his shares at any time he so desires and re-invest in other industries. He can diversify himself industrially and geographically. His holdings are in a "liquid" form and can be transferred into cash on a moment's notice should that be desirable. On top of all this, he has a good position at a good salary in a rapidly expanding, well-managed company.

There are now, and will be in the future, opportunities for the L. P. gas dealer to secure and greatly increase his capital as the industry becomes better organized and more mature which will in turn attract investment capital thus making possible larger and larger corporate units with their corresponding benefits.

Now let's get back to the three methods of selling a company and point out some of the advantages and disadvantages of each.

Selling for cash or part cash

If the first method is used, all of the profit realized is subjected to the capital gains tax which is due and payable within the taxable year along with the regular income tax. An owner's profit, or the taxable amount, would include the amount paid for the fixed assets in excess of their depreciated value as shown on the company's books plus whatever profit is contained in the excess of current assets over current liabilities.

"As a rule, an employee will have much more opportunity in a large organization, particularly if he has outstanding capabilities. Also, large corporations have pension and retirement plans, stock option plans for key employees, etc. most of which are not available in a small company."



*Mr. Henry C. Haar, partner, Acme Butane
& Appliances, Fresno, California, says:*

"Our Ford C-800 services 100 more accounts

"This Ford Tilt with Transmatic Drive gives us 550 gallons more product per trip, faster trip time and greater maneuverability

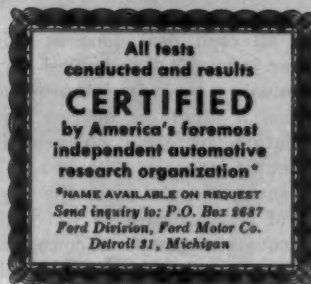
"We selected a Ford Tilt Cab model because it provided better weight distribution and let us carry about 550 gallons more product on 2 ft. less over-all length. This is important because we operate in the mountains where a short turning radius is a tremendous factor.

"The performance of our Ford C-800 has been very good! Transmatic Drive means

more deliveries per day because we get up to speed faster, and hold it longer. For example, this unit with 550 gallons more payload will take the Walker grade on Route 41 at 20 mph versus 6 mph for one of our other units. The hydraulic retarder is a real help on the way down.

"Also, we liked the beauty and the visibility you get with this Ford Tilt Cab model. We checked the others and thought the Ford was better built. Another advantage in favor of Ford was the price—we saved well over \$1000.00 on initial cost alone."

NOW!
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'59 Ford Pickups Win Economy Showdown U.S.A.

—average 25.2% better gas mileage!

Impartial tests of the 1959 pickup models of all six makes prove conclusively that Ford's ½-ton pickups equipped with Short Stroke Sixes are the economy champs for '59.

HOW TESTS WERE MADE

Standard six-cylinder models of the six leading half-ton pickups first were put through exhaustive road trials. All '59 trucks—Ford and competitive—were bought from dealers, just as you would buy them. After at least 600 miles break-in, all were brought up to manufacturer's recommended specifications.

The trucks were then tested — by America's leading independent automotive testing firm—at constant speeds of 30, 45 and 60 miles an hour. Next came stop-and-go tests, ranging from moderate city traffic to normal retail delivery operation. Acceleration rates were carefully timed in each gear to insure accurate results for all makes.

HOW NEW '59 SIXES RATE IN GAS MILEAGE

'59 FORD SIXES GIVE	25.2% more miles per gallon than Make "C"	31.1% more miles per gallon than Make "I"	9.6% more miles per gallon than Make "G"	42.6% more miles per gallon than Make "D"	22.0% more miles per gallon than Make "S"	25.2% more miles per gallon than the average of all makes
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The '59 Ford Sixes, *in every test*, averaged more miles per gallon than every other make! Combining all tests, the '59 Fords led the average of all other '59 pickups by 25.2%.

WHAT'S THE SECRET?

How can a '59 Ford Six make four gallons do the work of five in other trucks?

First, of all pickup Sixes, only Ford has modern Short Stroke design. This new type of engine is basically far more efficient than long-stroke Sixes of other pickups. Example: Ford's Six delivers more usable horsepower than any other pickup Six.

Second, to this modern engine Ford has added a new economy carburetor. By metering fuel more precisely in both low- and high-speed ranges, Ford's new carburetor boosts gasoline mileage in every type of driving. And Ford's Economy Carburetor is standard at no extra cost.

Your Ford Dealer now has the complete report of Economy Showdown U.S.A. Why not call or visit him today and get the whole story firsthand?

per month!"

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 LESS**

LESS TO OWN . . . LESS TO RUN . . .
 LAST LONGER, TOO!

An all cash deal done in this manner is by far the simplest way to liquidate a business interest and contains a minimum of risk and speculation. If your business is sufficiently large so that you will have enough capital after the payment of taxes to provide you with an adequate income from conservative investments, this plan in all probability should be followed. You

"... selling a company by exchanging all of your stock for stock in the buying company. The greatest advantage in using this method is that the transaction is non-taxable.... Owners who have a very substantial profit in their businesses... often feel they cannot afford to sell in any other manner."

get your money, pay your taxes, obtain clearance from the Internal Revenue Department, and you are through with the transaction once and for all. Now you are free to invest your money in a variety of good, sound, profitable growing American businesses, diversifying yourself both industrially and geographically. An investment program will vary considerably in accordance with the needs of the individual involved and the amount of capital available, and it is obvious that *expert advice* should be obtained and that great care should be exercised in the employment of your funds in order to attain the greatest degree of security and safety of your assets.

If you used the first method and accepted part cash and part stock in the buying company as payment for your company, then you have already taken care of at least part of your investment program.

Ordinarily you would not accept stock in the buying corporation unless there were definite advantages in so doing. The tax consequences are the same as they are for an all cash transaction, so there is no advantage in this respect.

However, there are other considerations. You may feel that the buying company has great growth potential thus affording you an op-

portunity for substantial increase in your capital. Perhaps by taking stock you will be given a place on the board of directors, thereby remaining semi-active in the business. In all probability you will be able to obtain a slightly higher price for your business than you could in an all cash deal; or perhaps this is the only way the buyer is willing or able to make the deal.

However, as a general rule, you should *not* accept stock *unless* the corporation is a public one, the stock has a wide, stable and ready market so that if you so desired you could sell part or all of it at the daily quoted price, and of course, the company must be a sound, profitable one with a good dividend record, attractive growth potential, and competent management in which you have complete confidence.

If the corporation does not measure up to these standards, then you would be simply speculating with your hard-earned capital and would probably be better off to make no sale at all at this time unless you *had* to sell out of sheer desperation. If you can afford to wait, chances are, a better opportunity will come along later on. Deals are like streetcars—there will be another one along in five minutes.

Selling by exchanging stock

Now let's look at the second method of selling a company by exchanging all of your stock for stock in the buying company. The greatest advantage in using this method is that the transaction is non-taxable—you pay no taxes on your profit unless and until you sell a portion of or all of the shares which you have received as payment for your company. Owners who have a very substantial profit in their businesses with the resulting high tax liability often feel that they cannot afford to sell in any other manner.

To illustrate, suppose you have negotiated with a bonafide buyer for the sale of your company by an exchange of stock, and a value of \$250,000 for your entire company has been mutually agreed upon. We will assume that you have 25,000 shares of stock issued in your company. The selling price would then

give your stock a value of \$10 per share. Now suppose the net, book depreciated value of your company amounts to \$150,000. This is equal to \$6 per share for your 25,000 shares and represents *your cost*. The difference of \$4 per share, equal to \$100,000 for the 25,000 shares, is *your profit*.

However, your profit, whatever it might be, is not taxable until you sell a portion or all of your new shares. You may hold all of the shares for a period of years, and they may increase in value to \$20, \$40 or \$100 per share. Naturally, there is always the possibility that they could decrease in value. But whatever the amount, anything in excess of your cost of \$6 per share

"In exchanging your stock for stock in the buying company, it does not matter what the current price of the other company's stock happens to be, assuming that it is a fair and realistic one, as long as the value of the total number of shares you receive is equal to your agreed selling price...."

is profit and subject to the capital gains tax when any of the shares are sold.

Stock price does not matter

In exchanging your stock for stock in the buying company, it does not matter what the current price of the other company's stock happens to be, assuming that it is a fair and realistic one, as long as the value of the total number of shares you receive is equal to your agreed selling price of \$250,000. If, by coincidence, the buying company's shares are valued at \$10 per share, you would receive 25,000 shares—the same number as you had in your company. If the other company's shares are valued at only \$5, then you would receive 50,000 shares of the buying company's stock. In this case your cost would be \$3 per share (\$150,000) and your profit \$2 per share (\$100,000). Or conversely, the buying company's stock might be worth \$20 per share in which event you



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MARVIN L. DOSS
1118 GREEN STREET
ABILENE, TEXAS

B. E. PATTON
6446 XERXES SO.
MINNEAPOLIS, MINN.

G. C. ANDERSON
7737 HAMILTON ST.
OMAHA, NEBRASKA

would receive 12,500 shares; or the other company's shares might have a value of \$100 in which case you would receive 2500 shares. However, in each instance the number of shares which you will receive all have the same total value of \$250,000. Your total cost and profit remain the same and their amount per share is simply determined according to the applicable number of shares.

Obviously, you would *not* make this kind of a deal unless the buying corporation can meet the tests and standards as outlined above. There is no possible point in "jumping from the frying pan into the fire" only to find yourself holding stock of questionable value with no ready and stable market.

However, if you do have the opportunity to sell your company by means of a tax-free exchange of stock in a sound, profitable, well-managed and expanding corporation, you should probably do so as this plan has all of the advantages and none of the disadvantages of the other methods.

Although industrial diversification is not immediately accomplished, which can be done in an all cash deal, you will be able to sell a portion of your shares when the time is opportune and then reinvest in other industries. Money which would have otherwise had to be paid to the tax collector is now earning for you, and over a period of years your shares of stock may greatly increase in value.

The big problem here, as far as the LPG dealer is concerned, is that the opportunity for making this kind of a transaction is extremely rare. In the first place, there are less than a half dozen L. P. gas corporations in the United States with stocks in the hands of the public which could come up to the standards required for a sound and attractive investment.

Secondly, those companies that do meet the tests, often will not give out their stock when they acquire other companies. Thirdly, although hundreds of large, sound, well managed and expanding companies in other industries are earnestly looking for good businesses to buy outside their immediate field for the purpose of diversification, they are not for the most part look-

ing in the direction of the L. P. gas dealer. However, this situation will no doubt gradually change as the LPG industry matures and much larger units come into being thus making the opportunity for investment on the part of outsiders much more attractive.

Selling on installments

If an owner uses the third method of making a sale, i.e., the installment plan by taking less than 30 per cent of the total sales price as a down payment, there are several factors to be considered.

Such a method is advantageous taxwise. Your profit for the entire transaction is determined in the manner previously outlined and the capital gains tax is paid on a pro-rata basis. You pay only the tax due on that portion of the profit in the down payment, and you continue to pay a portion of the tax each year on that part of each payment which is profit.

To illustrate, using the same example as before, you sell your company for \$250,000 and your net depreciated book value is \$150,000 making your taxable profit \$100,000. Suppose you make an installment sale by accepting 25 per cent down with the balance payable over a 10-year period in 10 equal installments. Your capital gains tax is payable in the same manner—25 per cent of the tax due is payable with the down payment, and the remainder of the tax is payable at the rate of one-tenth of the unpaid balance each year.

If sometime during the ten-year period, the buyer decided to pay off the balance of the principal due, for example at the end of five years, the installment privilege

ends and all of the remaining tax is due and payable.

This method has the advantage of spreading your capital gains tax over a period of time during which the funds which would have otherwise been paid out in taxes are now earning for you. Also, you are receiving interest all the time on the unpaid balance which gives you a fixed rate of income which might be desired.

Disadvantages of installment

One of the greatest disadvantages of this plan is that your capital has no opportunity for growth except as you are paid off year by year and can reinvest the money in other businesses which have an attractive growth potential.

During an inflationary period the installment method can be very costly. For example, an owner who sold his business in 1948 on a 10-year installment basis has lost money in several directions. First, by not having *all* of his capital available for investment in 1948 he has missed the opportunity to greatly increase its value and income. At that time, if you had cash, it was a fairly simple matter to increase the value of your capital during the 10-year period by 200 to 400 per cent with a minimum amount of risk. Many sound stocks have increased in value by 700 or 800 per cent, some more.

But don't get the idea that you could have bought "just any old stock" and realized such growth in your capital. Great skill is required in handling your investments, and it should be mentioned here again, that established experts of unquestioned integrity and ability in the financial field should be con-

Coming next month in part four of this series . . .

A discussion of how an individual LPG dealer or a group of LPG dealers may obtain public financing.

The role and function of the investment banker.

An explanation of what the term "underwrite" actually means.

The four most important requirements for a successful underwriting.

The four reports which must be submitted to investment bankers.

How to approach the investment banker—a few important "do's" and "don't's" for the LPG dealer when he is dealing with the financial community.

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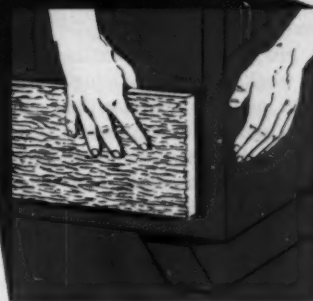
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Secondly, while the assets which were sold in 1948 continually *increased* in value, the dollars received by the seller were continually *decreasing* in value and *buying power* each year. This situation is fine for the buyer but not so good for the seller. About the only way your capital has a chance to increase in value under an installment sale is during a *deflationary* period. With this condition, you may have sold your company under a condition of "cheap" dollars and you are being paid off in continually more "expensive" dollars having increased buying power. This has the effect of your having sold your company for much more than you thought you had.

Because of the possibility of this situation, most term contracts include the right to liquidate the unpaid balance at any time during the life of the contract, so you are not likely to gain no matter what.

Before entering into an installment sale, the matter should be given very careful consideration in the light of present and possible future economic conditions. And obviously, you would *not* make this type of sale to any buyer other than one who has the unquestioned ability to pay and make good on the contract.

The foregoing has discussed one of the three courses of action an owner of a successful enterprise might consider in attempting to secure his capital accumulation—that of selling his business. We have also discussed in very general terms, although there are many ramifications and details not mentioned here, the various ways in which a business may be sold.

In our next article we will discuss what an owner might be able to do if his business is large enough to justify a public underwriting which would also apply if a group of smaller businesses were to seek public financing. We will also show what specific information must be compiled in order to obtain the interest and backing of investment bankers and what the necessary requirements are for a deal before money can be obtained in large quantities from the public. ■

BPN SPECIAL REPORT

Both sides ready for 1959 REA battle

NEIL REGEIMBAL • Washington Editor

PRESIDENT EISENHOWER is facing strong opposition in his efforts to wean the rural electric power program away from government subsidies.

In both his annual budget proposal and his yearly economic report to Congress, the President called for a reduction in the government's present subsidization of the rural electrification program.

"The present statutory interest rate of 2 per cent for loans made by the Rural Electrification Administration (should) be replaced by a rate which will cover the current cost to the Treasury (Department) of equivalent borrowing and other reasonable costs," the President said.

In addition, the President is again urging that legislation be enacted to help REA co-ops obtain financing from private commercial sources.

In line with this recommendation, the President is proposing to reduce new appropriations for the REA to \$136 million, plus a \$25 million emergency fund. This, along with a carryover from the current year of \$107 million and \$2 million in turned back funds would give REA a total of \$207 million to lend next year, (beginning July 1).

This compares with \$407 million this year (of which only \$300 million will be spent).

The President last year attempted to cut appropriations in half to send the co-ops to private money markets. But Congress not only rebuffed him in not passing necessary legislation, but doubled his recommended appropriation to make it unnecessary.


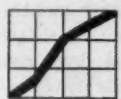



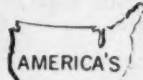
This move to send co-ops to private money sources is bitterly opposed by the co-ops. They complain it would put them at the mercy of the big money interests (where all normal business now is).

The President is also asking Congress to change its method of providing funds for a reduced REA. At present, all funds are appropriated directly each year. He is in favor of changing this to a revolving fund system, whereby repaid loans are retained by the agency and used for future expenses.

Last year, the Eisenhower Administration suffered a bloody defeat in these efforts to unsubsidize the sacred-cow REA program. Although officials repeatedly sought legislation, they could not even come up with a congressman willing to sponsor it.

This year, however, things are a little better. Two bills were introduced in the first three days of the new congressional session. Rep. Edgar W. Hiestand, (R), Calif., on the opening day (Jan. 7) tossed H. R. 372 into the hopper. This measure would require REA borrowers to pay an interest rate equal to the average rate the government has paid in the preceding fiscal year for similar obligations of 10 or more years, plus a "loan service fee" set by the government high enough so that the aggregate loan fees collected over a year will equal the cost of administering, investigating, and processing loans.

Two days later, Rep. Frank J. Becker, (R), N. Y., introduced H.R. 1781. This measure also would require interest equal to the average cost to the government of

Again in 1958 **MORE** Dealers sold **MORE** Warm Morning Gas Heaters! These beautiful,  feature-packed gas heaters again led the industry in sales gains  with a **34%** increase over 1957. New  **Top-O-Matic** Controls will rocket  Warm Morning Sales to a new high in **1959**. Easier sales, bigger profits  can be yours with  AMERICA'S fastest selling gas heaters!

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MARCH, 1959

47

REA . . . Consumers passed 5 million in '58

similar borrowings, plus a fixed loan service fee of $\frac{1}{2}$ of 1 per cent.

At present, the government is paying about 4 per cent interest on its medium term borrowings, so REA co-ops would have to pay close to 5 per cent, as compared with the present 2 per cent.

Rep. Hiestand, a backer of a realistic REA program, also is sponsoring H.R. 370, which would deny tax exemption to any rural electric cooperative which "engages in propaganda or otherwise attempts to influence legislation . . . or any political campaign."

But backers of the present subsidized REA program aren't loafing either. A week after the Hiestand and Becker bills were introduced in the House, Sen. George D. Aiken, (R), Vt., and five other senators introduced legislation to promote expansion of REA co-ops despite the growing urban nature of many of the areas they serve.

Sen. Aiken said the measure was prompted by recent rulings of the Comptroller General which ban additional government loans for expansion of co-op power lines to persons or industries "located on, along side of, or within a 'reasonable distance' of an existing power line." His bill would reverse these rulings.

He was joined by Sens. Hubert Humphrey, (D), Minn.; Thomas H. Kuchel, (R), Calif.; John Sparkman, (D), Ala.; John Kennedy, (D), Mass.; and Milton Young, (R), N. D. He expected additional sponsors to join his move.

In the House, Rep. E. Y. Berry, (R), S. D., introduced legislation which would re-establish the Rural Electrification Administration as an independent government agency. This move, long sought by the co-ops, would put the REA program back to the status it enjoyed until 1936 with its own head and an independent budget. It has been under the Agriculture Department since 1936.

Meanwhile, the REA in its annual report, reinforces the complaints of private competing busi-

nessmen that the government is now subsidizing power for industry, business, and just about everything but rural users.

Power sales of REA-financed systems rose 10 per cent during calendar 1958, the agency reports, reaching an estimated 21.7 billion kw hours. Average monthly use for each consumer rose from 283 kw hours to 304 kw, reflecting growing use of this power by large consumers — plants, towns, and business firms—as well as some increase in use by farmers.

The net worth of REA electric borrowers continued to rise too, standing at about \$512 million at the end of 1958. This is 16.4 per cent of total assets, and an increase of 1.5 per cent over 1957.

The number of "farmers and other rural consumers" served and scheduled to be served by REA co-ops passed the 5 million mark in 1958, the agency reports. Some 124,000 connections were added during last year, bringing the number actually on lines to 4.6 million.

Some \$215.2 million in electric loans to 260 borrowers were approved last year, bringing the cumulative total of loans made in the 23-year history of the agency to a whopping \$3.8 billion, of which \$3.3 billion has actually been advanced to borrowers.

There are now some 986 electric borrowers who are actively using government funds, have been approved for loans, or have applied for them.

Of last year's loans, about 55 per cent will go for improvements in existing distribution systems and for new distribution facilities. Some 42 per cent will go for new generation and transmission facilities. But 2 per cent, or better than \$500,000, will be used to finance "consumer facilities"—loans for purchases of appliances and equipment.

REA co-ops now generate about 3.6 billion kw hours themselves, but buy some 21.2 billion kw.

For competitors, the agency's reports on rates and profits is

bleak. The average price for consumers of REA power is dropping, from an average of 2.51 cents per kwh in 1957 to 2.47 cents last year. Operating revenues however rose 8 per cent to \$563.1 million, with net margins hitting \$73.3 million, up 6 per cent after expenses, depreciation and interest (no taxes).

These figures reinforce the Administration's argument that the systems can now leave the government's bosom and walk on their own. Proponents still point out that some 96 per cent of all farms have central station electric power, and that half of all power used and 75 per cent of new power is not for farmers, but for plants, businesses, etc. located in once-rural areas.

In spite of this, however, there is little chance of success for the efforts to turn the co-ops into normal business competitors. The present program is widely supported as a vote-getter by some of the most powerful men in Congress, including Senate majority Leader Lyndon Johnson, and House Speaker Sam Rayburn, both Texas Democrats. ■



In order to obtain maximum publicity and advertising value from its initial step into the over-the-road propane motor fuel business, Suburban Propane Gas Corp. installed this Nor-Tex "Rocket" tank at Secondi Bros. Truck Stop, a leading truck servicing station near Milford, Conn. From February 20, 1958—when the propane filling equipment was put into operation—up to October 20, propane motor fuel sales exceeded 14,000 gal.

**YOU SELL MORE BECAUSE...
YOU HAVE MORE TO SELL
WITH THE JOHN WOOD FULL LINE**

plus

HIDE-A-WAY

**SELLS THOSE HARD-TO-FIT
HOT WATER INSTALLATIONS**



John Wood's Hide-A-Way gas water heaters fit where others can't — where space is limited and dependable hot water service is a "must." Makes sales where you never sold before. Glasslined and galvanized models.

JOHN WOOD COMPANY

Heater and Tank Division

Conshohocken, Pennsylvania • Chicago, Illinois



What the serviceman should know about ...

L. P. gas clothes dryer controls

Part 2: Standing pilot systems

E. W. WECHSLER • Manager, Technical Sales Division
White-Rodgers Co.

FROM an electrical standpoint, a standing pilot system is somewhat similar to an electric ignition system. It may also be simpler to understand and service because there are less components involved.

The heart of a standing pilot dryer control system is the pilot itself. The pilot is used in conjunc-

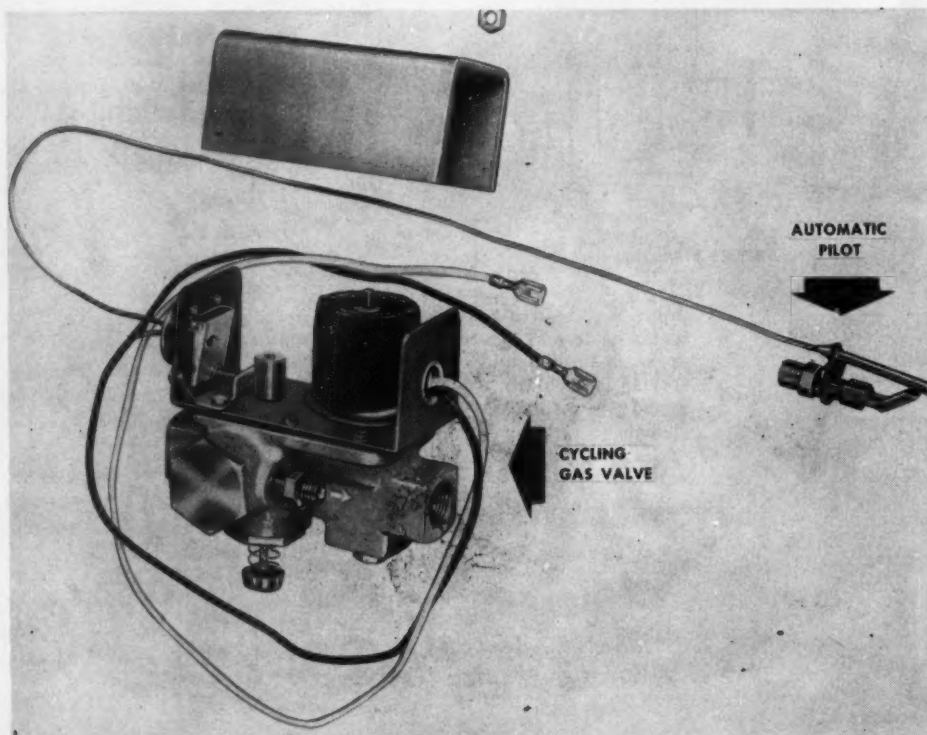
This is the second of two parts by Mr. Wechsler. Last month, the dryer controls authority discussed electric ignition controls.

tion with a mechanical valve, once again giving 100 per cent shut-off. A standing pilot is just what the name implies, in that once it is lighted, it is intended that it will remain lighted at all times. It differs from an electric ignition pilot, since that is ignited only during the drying cycle. By the nature of the fact that standing pilots are lighted continuously, they usually have a lower Btu rating than an electric ignition pilot.

Standing pilots are practically always lighted manually. It is

usually necessary to light the pilot with a match, while holding down a button or some other lever mechanism, until the pilot is energized. The mechanical valve incorporated with the pilot, controls the gas to it. When the button or lever is pressed, the mechanical valve passes gas to the pilot. The pilot is then ignited by the match, and heats the thermal element, which may be either a hydraulic-action or a thermocouple type.

The button must be held down for a period specified by the manu-



These are the components of a standing pilot system for gas clothes dryers.



ON TIME! TEXACO LPG DISTRIBUTORS ASSURED OF DEPENDABLE SUPPLIES IN A BOOMING MARKET!

Texaco Distributors can be assured of plentiful supplies. Texaco is one of the largest producers, and has a new fleet of tank cars to insure fast, on-time deliveries.

There's a solid future ahead for LP-Gas Distributors who can count on a dependable supply at all times. In 1950, 3.4 billion gallons were sold. The volume for 1960 is expected to be 8 billion gallons.

Texaco Distributors stay with

Texaco. Proof: 683 distributors of Texaco products have been with us for 20 years or more—and many others for as long as 45 years.

5 reasons why it pays to be a Texaco LP-Gas Distributor

1. A product of highest quality—moisture-free.
2. Dependable and efficient delivery, in a new fleet of tank cars, from 25 strategically located production areas.

3. Immediate acceptance. Texaco LP-Gas is sold under the nationally-known, famous trade-mark, the Texaco red Star with the green "T".

4. One of the largest producers of LP-Gas, The Texas Company is the only petroleum company to build up successful distribution of its products nation-wide.

5. Profitable and proved sales policies. Texaco does not compete with its independent distributors of LP-Gas.



Team your name with Texaco and profit. Some areas are still open for a sound and profitable business with Texaco LP-Gas. Let us tell you how. Call or write today... The Texas Company, LPG Sales Division, P.O. Box 2420, Philtower Bldg., Tulsa, Okla., Diamond 3-4101; 3350 Wilshire Blvd., Los Angeles 5, Cal., DUnkirk 5-0515.



facturer, or until the pilot is energized. The only signal indicating that the pilot is energized is the fact that when the button is released, it remains lighted. If for some reason it has not lighted satisfactorily, or the button has not been held down a sufficient length of time, the mechanical valve will again shut off gas to the pilot, when the button is released.

The same situation holds true if there is a pilot failure at a later date, for when the pilot flame is extinguished, and the thermal element cools, the mechanical valve will shut off gas to the pilot.

Standing pilots, for the most part, operate with a fixed orifice sized for L. P. gas. In some systems, the same orifice is used for any gases, with a needle valve for

the pilot adjustment at the time of installation.

Cycling solenoid valve

As in the case of an electric ignition system, there is a main burner valve, or cycling solenoid valve, which operates at the command of the timer, the thermostat, and the limit. The latest models of standing pilot dryer controls include the cycling valve in the same casting with the mechanical pilot valve and pilot switch. The cycling, or main burner valve, will not open when the pilot is not lighted, in addition to those periods when the drying cycle is completed, or the temperature is up to the thermostat setting in the drum, or for some reason the high temperature limit switch operates.

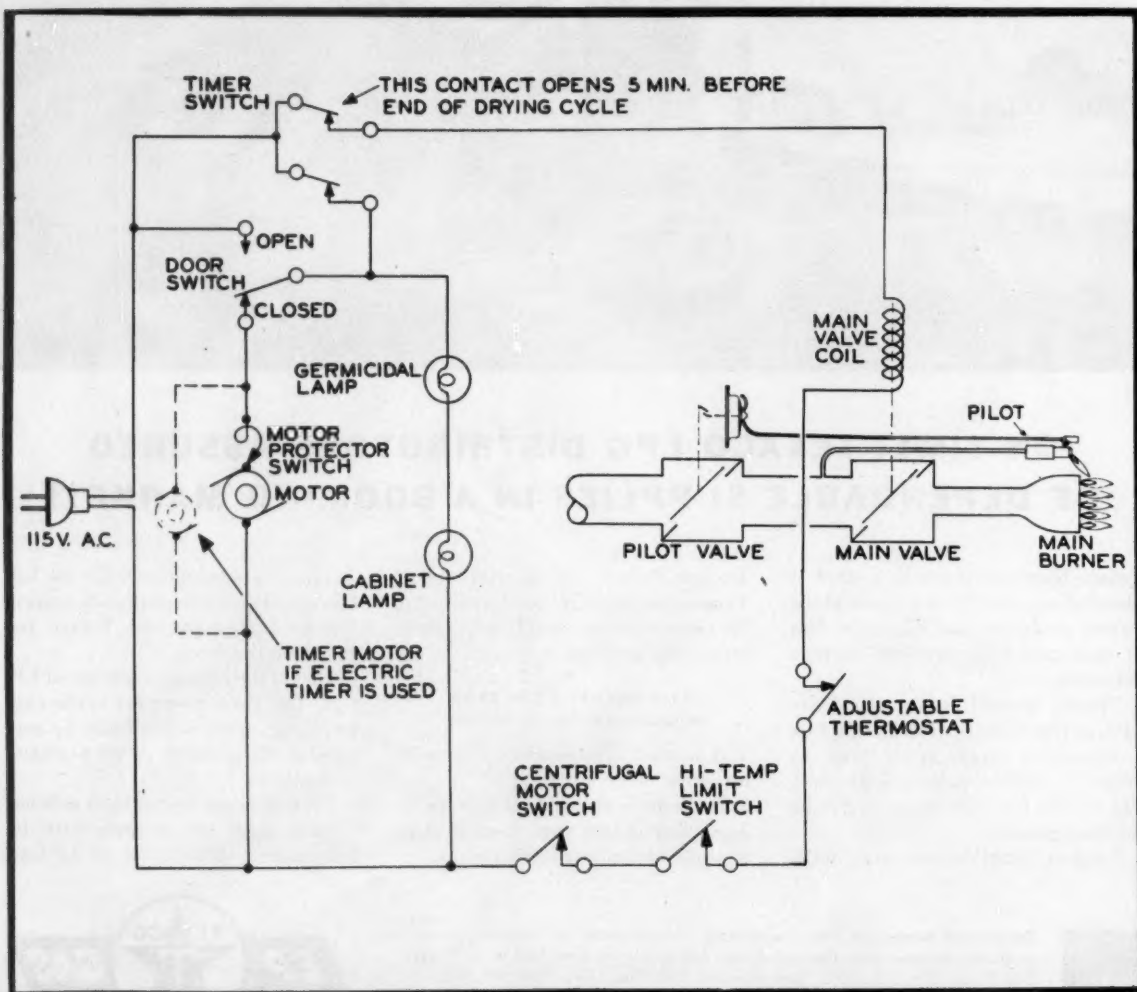
Again, as in the case of an electric ignition system, the cycling thermostat, or one or more fixed setting thermostats, controls the drying temperature.

High temperature limit switches

High temperature limit switches are also found in various locations in the dryer. Some systems also include an additional limit in the mechanical system of the pilot, so that if the main burner valve should not close satisfactorily, the pilot mechanism will be tripped, cutting off both main burner and pilot gas, and preventing overheating of the dryer.

Gas pressure regulator

As in the case of an electric ignition system, a pressure regulator is



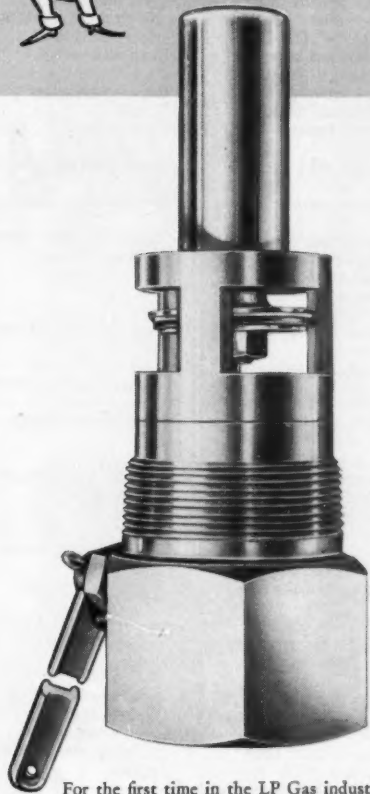
Wiring diagram showing general characteristics of a standing pilot system.

Little Joe says: it's truly remarkable

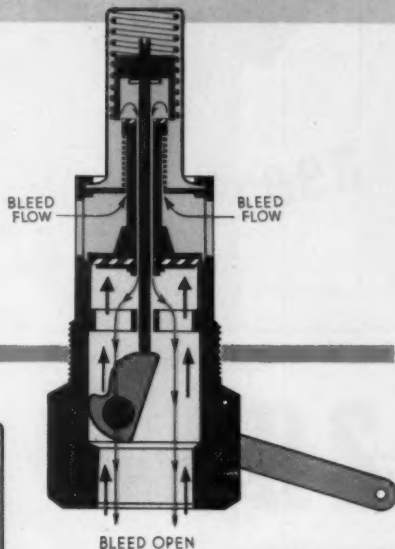
NEVER BEFORE A VALVE INCORPORATING SO MANY SAFETY FEATURES



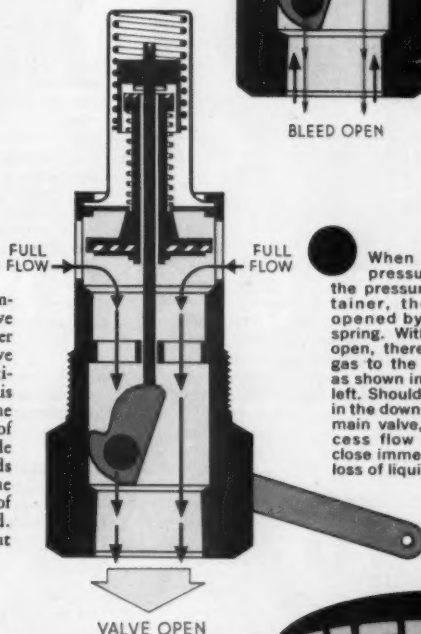
Here is the **FISHER C-154**
internal primary shutoff valve



When valve lever is moved to the open position, a cam forces the valve stem into the up position. This allows the liquid inside the container to bleed through a small passageway between the valve stem and the stem guide. This flow is indicated by arrows and with the deep yellow color in the illustration at right. The bleed flow of gas to the downstream side of the valve causes pressure in the downstream side to build up.



For the first time in the LP Gas industry, a completely internal primary shutoff valve and excess flow check valve for use in ASME containers (truck, semi-trailer or trailer mounted tank) is now available. The only part of this valve outside the container is the outlet connection. Even if an accident should shear the outlet connection, a gas-tite seal is maintained, or if at time of accident the valve is open, the main valve will automatically close, preventing discharge of gas. Main valve opens only when pressures on the outlet side of the valve approximate those on the inlet side. The hazards of opening a valve to an open line are eliminated. Because the shutoff mechanism is completely enclosed, accumulation of sludge or silt in the operating portion of the valve is prevented. We urge you to write today for complete information about this outstanding new development in LP Gas controls.



When the downstream pressure approximates the pressure inside the container, the main valve is opened by the excess flow spring. With the main valve open, there is a full flow of gas to the downstream side as shown in the illustration at left. Should there be a break in the downstream piping, the main valve, acting as an excess flow check valve, will close immediately preventing loss of liquid.



IF IT FLOWS THROUGH PIPE ANYWHERE IN THE WORLD... CHANCES ARE IT'S CONTROLLED BY...



FISHER GOVERNOR COMPANY Marshalltown, Iowa SINCE 1880

STANDING PILOT SYSTEM

Step from cold start	OBSERVATION				POSSIBLE CAUSE	HOW TO CONFIRM CAUSE	POSSIBLE REMEDY
	Cabinet Light	Motor	Pilot Flame	Main Flame			
1.	---	Running	No. Pilot gas will not ignite.	No	No, or Insufficient Pilot Gas Caused By: A. Main line or pilot gas cock closed. B. Air in gas line. C. Blocked pilot orifice. D. Low gas pressure. E. Blocked pilot port.	A. Check visually. B. Lighter blows on attempt to ignite. C. Remove and inspect orifice. D. Check pressure with manometer. Should be 3" to 3½", (11" LPG). E. Visually inspect.	A. Open line, or pilot gas cock. B. Bleed air from line. C. Clean with solvent. D. Check line pressure. Notify utility if low, or replace LPG tank. E. Clean ports.
2.	---	Running	No. Pilot will not stay lighted on release of button.	No		A. Check pressure with manometer. Should be 3" to 3½", (11" LPG). B. Remove and inspect orifice. C. Check orifice size with instruction manual. D. Visually inspect. E. Visually check flame. F. Visually inspect. G. Hold mechanical limit closed manually, or short out limit terminals in thermocouple circuit temporarily. H. Inspect lint trap and vent pipe. I. Visually inspect element.	A. Check line pressure. Notify utility if low, or replace LPG tank. B. Clean with solvent. C. Replace with proper orifice. D. Clean ports. E. Clean primary air holes, or lint screen. F. Straighten pilot shield. G. Replace high temperature limit mechanism. H. Clean lint trap, and vent. I. Replace pilot switch assembly or thermocouple.
3.	Off	Not Running	---	---	A. Dryer unplugged. B. Open fuse. C. Open circuit in timer.	A. Check electrical connections. B. Observe fuse. C. Check continuity thru thermostat timer contacts.	A. Restore power to dryer. B. Replace fuse. C. Clean timer contacts, or replace timer.
4.	On	Not Running	---	---	A. Motor overload protector open. B. Door switch contacts open.	A. Check continuity thru motor overload protector. B. Check continuity thru door switch.	A. Replace motor overload protector. B. Replace door switch.
5.	---	Running	Yes	No	A. Open circuit in cycling thermostat, or high temperature limit. B. Open circuit to main burner valve coil. C. Open circuit in door switch or timer contacts.	A. Check electrical continuity thru thermostat and limit. B. Check electrical continuity to main burner valve coil. C. Check continuity thru door switch or timer contacts.	A. Replace thermostat or limit. B. Repair open circuit, or replace coil. C. Replace door switch. Clean timer contacts or replace.
6.	---	Running	Intermittent. Pilot gas snuffs out when main burner comes on.	Intermittent. When main burner comes on, pilot goes out. Then main burner is extinguished also.	A. Low gas pressure. B. Main burner starving pilot because of operation of pressure regulator. C. Incorrect orifice. D. Dirty pilot orifice.	A. Check with manometer. Should be 3" to 3½" (11" LPG). B. Check regulator for sticking or failure to act quickly. C. Check orifice size with instruction manual. D. Remove and inspect orifice.	A. Report to utility, or replace LPG tank. B. Gently tap regulator. If condition persists, replace regulator. C. Replace with proper orifice. D. Clean with solvent.
7.	---	Running	Yes	Yes. Chattering or buzzing main burner valve.	A. Low line voltage. B. Poor electrical connection. C. Dirt on valve plunger, or in plunger tube.	A. Check with voltmeter. B. Check electrical continuity thru all connections, particularly to main burner valve. C. Remove valve head and inspect.	A. Report to utility. B. Repair poor connections. C. Carefully clean plunger, tube, and valve seat.
8.	---	---	---	Main burner does not close when power is disconnected.	A. Dirt on valve seat.	A. Remove valve head and inspect.	A. Clean valve seat carefully.



Aluminum

Metallic Blue

Metallic Green

NOW IN 3 COLORS

Sheffield gas cylinder paint

Here's an EXTRA that will add excitement to your business! Sheffield has developed this special gas cylinder paint formulation of a METALLIC paint in pastel blue and green in addition to its well known aluminum...and it's great! Takes plenty abuse...and comes up bright and smiling! Available in gallon, 5 gallon and 55 gallon containers.

- FAST DRYING
- MAY BE STENCILLED WITHIN 15 MINUTES
- HARD SURFACE
- WON'T RUB OFF
- SATIN FINISH
- MAY BE BRUSHED OR SPRAYED
- MADE WITH A SPECIAL SYNTHETIC VEHICLE THAT IS INSOLUBLE IN TURPENTINE OR ORDINARY PETROLEUM THINNERS

Sheffield ALUMINUM TANK PAINT

Extensive weather-o-meter tests prove this NEW aluminum paint will resist more than one and one-half years EXPOSURE TO WEATHER EXTREMES! Formulated to do TWO specific jobs...to PROTECT surfaces against rust, wear and corrosion and to add a long lasting attractive finish. Covers all primed surfaces in ONE COAT... economical because it is long lasting! Ideal for Bulk Gas Storage Tanks.

SHEFFIELD BRONZE PAINT CORPORATION

Cleveland 19, Ohio

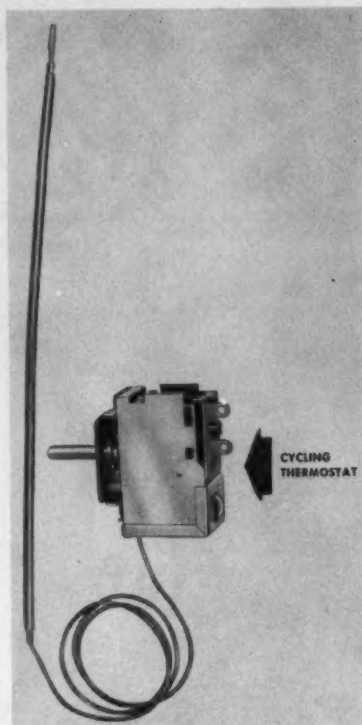
included as a part of the L. P. gas supply system. It is usually set for 11 in. wc pressure.

The timer, door switches, centrifugal motor switches, and other components identified with an electric ignition system can also be found in a standing pilot system. Here again, the entire control system operates from 115 volts.

Sequence of operation

In the case of a standing pilot dryer control system, the sequence of operation begins when the pilot is first lighted. As covered previously, the button on the pilot must be held down during lighting, allowing the mechanical valve to pass gas to the pilot. This gas is then ignited by a match. Possibly a runner tube is used, wherein the gas is actually lighted at the runner tube, and this in turn lights the pilot.

When the pilot is sufficiently hot to mechanically lock the pilot valve mechanism in the open position, the button can be released. This differs from an electric ignition



A cycling thermostat controls the drying temperature.

system, in that the pilot valve is operated through an electric switch, whereas this is a completely mechanical system.

After the pilot is lighted, or if it remains lighted from a previous drying cycle, the housewife chooses the necessary thermostat adjustment, as in the case of the electric ignition system, and also sets the timer. The main burner valve opens immediately, and the drying cycle begins. Here again, the length of the drying cycle is determined by the timer, with the temperature in the drum controlled by the operating thermostat.

At the end of the cycle, the main burner is extinguished, and the drum and fan are de-energized. The pilot, however, will remain lighted for the next cycle, or continuously, as the choice may be.

If for some reason during the drying cycle the pilot is extinguished, the mechanical valve will close, and shut off gas not only to the main burner, but to the pilot as well. It will then be necessary to reignite the pilot manually. ■

Does your present insurance protect you after an installation is completed?

A RECENT Supreme Court case has finally settled the point that when an L. P. gas dealer leaves a customer installation and removes his tools and equipment from the job his Manufacturers' and Contractors' (Premises-Operations) insurance protection leaves with him; therefore, if the customer thereafter has an accident from an explosion emanating from the installed LPG system or appliance, the L. P. gas dealer has no insurance coverage for any damage claim the customer may make against him by reason of alleged defective installation of the system or defective appliance.

From this case it will be seen that an L. P. gas dealer is only partially covered by insurance in his operations if he does not buy Products (Completed Operations) insurance. As a matter of fact, without this insurance coverage one of the most important parts of his operation is not insured.

Should an accident happen while the dealer is on the customer's premises making an installation or servicing an installation or an appliance, he and his employees are familiar with L. P. gas and can prob-

ably cope with the situation and prevent an accident from becoming too serious. The more serious accidents usually occur after the L. P. gas dealer and his employees have left the customer's premises, and the customer himself is using the L. P. gas installation or appliance.

The customer, being less familiar with L. P. gas, does not know how to cope with the situation, and when such an accident occurs he usually does the wrong thing and death, personal injury, and substantial property damage often results. When this happens the customer claims that the L. P. gas dealer made a defective installation, or that the appliance was defective, and absolves himself of any blame.

Any jury verdict can be the full liability and responsibility of the insurance company when the dealer protects himself against all eventualities by buying a Comprehensive General Liability Policy, including therein Products (Completed Operations) coverage. ■

(Submitted by L. E. Davis, Chief Safety Engineer, Pan American Insurance Co., Houston.)

8 WAYS TO MORE PROFITS AS A PHILGAS^{*} DISTRIBUTOR



- 1** Philgas advertising keeps the advantages of Philgas before your customers and prospects... helps keep Philgas the largest selling LP-Gas in America!
- 2** Philgas Business Control Workshop helps you run your business more efficiently and more profitably, too.
- 3** Philgas Cooperative Advertising Program keeps *your* name before your customers and makes new contacts for you.
- 4** Sales Promotion Aids are available for special "pushes" and seasonal promotions. They can help you sell more Philgas.
- 5** Take advantage of the Philgas Planned Delivery System for the most efficient operation of your transportation equipment and manpower.
- 6** Philgas Even Payment Plan spreads your customers' costs over a twelve month period. More convenient.
- 7** Technical assistance is *promptly* available. Phillips maintains a large staff of trained and experienced men located throughout Philgas territory, for consultation on your problems.
- 8** When you deal with Phillips you have no worries about supply. Full scale production and modern transportation facilities assure on-time deliveries.

^{*}Philgas is the Phillips Petroleum Company trademark for its high quality LP-Gas (propane, butane).



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INDIANAPOLIS, IND.—3839 Meadows Drive
KANSAS CITY, MO.—201 E. Armour Blvd.
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NEW YORK, N. Y.—80 Broadway
OMAHA, NEB.—3212 Dodge St.

RALEIGH, N. C.—401 Oberlin Road
SALT LAKE CITY, UTAH—68 South Main
ST. LOUIS, MO.—4251 Lindell Blvd.
TAMPA, FLA.—3737 Nephew St.
TULSA, OKLA.—1708 Union Square
WICHITA, KAN.—301 KFH Building



"Look What GAS Is Doing" was the theme of the Pennsylvania LPGA-utility companies booth at the recent State Farm Show.



Appliances were displayed by type rather than by brand so that Show visitors could see the large variety available and compare.

LPG dealers, utilities unite for farm show

WILLIAM T. HARPER • Eastern Editor

THE 43rd annual Pennsylvania State Farm Show in Harrisburg last month was the proving ground for a "noble experiment." For the first time, the state's L. P. gas men and their utility counterparts pooled their efforts and resources to make one big appliance display booth at the show rather than the usual complex network of small individual exhibits. An institutional-type gas industries booth was the result.

"Look What GAS Is Doing" was the theme of the display which covered an area of 20 x 50 ft. In this space, 25 manufacturers showed their products off to good advantage rather than have to crowd them into the 10 x 10 ft. booths they had in the past.

Another innovation in this year's show was that the appliances were displayed by types rather than by brands. This had all the ranges, water heaters, refrigerators, etc., grouped together. The idea here was to give greater impact on what gas — whether it be liquefied petroleum or natural — can do for the consumer. Also along this same line was a pictorial display tracing the route of gas from wellhead to the burner tip to show the viewers that gas is and can go anywhere.

And, taking a cue from the success of the display at last October's AGA convention in Atlantic City, nearby Haco Aluminum Products Co. illuminated the entire area with gas lamps.

Commercial applications of gas were not overlooked either as a

commercial cooking range was exhibited and a propane engine was on display to show its feasibility. Other pictorially illustrated applications for gas fuel included brooders, weedburners, carburetion and water heating.

Under the new setup, the salesmen — including 65 L. P. gas dealers — manning the booths got a break, too. They were divided into three shifts instead of two for the show which runs from 8:30 a.m. to 10 p.m. There were always at least six men "on duty" and they talked "institutionally" to the people. They tried to "sell" the gas industry to the visiting farmers and housewives to show that gas is available to them wherever they live.

The idea for the State's gasmen to "put all their eggs in one basket" was broached first several years ago. For 10 years it had been felt that the visitors' interest had been waning towards the gas exhibits. Each year the show attracts nearly 750,000 people. With 10 individual booths set up, it became apparent that the people were becoming annoyed at having to wander back and fourth between the booths to compare the products to see which suited their needs best.

This confusion on the part of the consumer was aiding the kilowatts. The displayers were dismayed. A survey of the manufacturers by the State's LPGA revealed they were thinking of pulling out of the show completely.

Something had to be done. So, the L. P. gas people went to the Pennsylvania Gas Association and proposed the institutional-type display. The booth was to depict all applications of gas and would not be concentrated on given appliances. There was to be no emphasis on fuel. At first, the PGA people were cool to the idea. Then came the clincher.

During the 1958 Show a survey on fuel used for cooking was taken and 4764 people were polled via questionnaires. It was shown that 28.4 per cent of these polled used city gas and 23 per cent used L. P. gas. The clincher was that 34.7 per cent used electricity! The remaining 13.9 per cent used other fuels (wood, coal, etc.). That 34.7 figure sold the utility men.

The Pennsylvania Gas Industry Exhibit committee was then organized and it was agreed that the State's LPGA and PGA would underwrite the Farm Show exhibit and share the cost equally. The LPGA committed its entire treasury to the exhibit. The collective cost to the two associations for the 1959 exhibit was figured at \$8000 capital expense. The association will likewise share whatever income is realized from payments by manufacturers and others who displayed equipment.

Thus, the joint effort of the two groups made it a great deal easier and more enjoyable for those attending the Pennsylvania State Farm Show to "Look (at) What GAS is Doing."



In CANADA... or CARACAS

PAYLOAD
is what counts...

... here's one of several 3,000
WG T-1 Bobtails ordered from
Trinity Steel by Canada's larg-
est LPG distributor ...



No matter where you operate, payload is the point ... and that's why Canada's largest L-P Gas distributor, Superior Propane LTD., of Toronto, Ontario chose Trinity's 3,000 WG Bobtail, fabricated with T-1 to replace their entire fleet!

Trinity engineering and T-1 steel really count ... more than 10% increase on every haul.

No matter where you are ... Canada, Caracas or Clear Lake, Iowa, if you want that extra edge on profit, check with Trinity for tank trucks fabricated with T-1 ... the wonder steel!



TRINITY STEEL CO., INC.

4001 IRVING BLVD./DALLAS, TEXAS, U.S.A./PHONE Fleetwood 7-3961

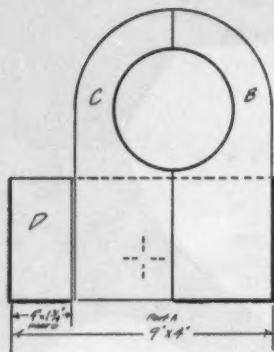
Latin American Division: Tanques de Acero Trinity, S. A. Calle Poniente 150 No. 734, Mexico, 16, D. F., Plant and Sales Office.



How to make a simple cylinder rack for pickups



FRANCIS DREW SR.



SOME time ago we sold a Ford pickup truck to be used for hauling L. P. gas cylinders. In this state these cylinders must be transported standing up and made fast to the truck.

The customer wanted a rack built on the truck to accommodate four of these cylinders, and he didn't want to use rope or chains to hold them in place. The cylinders had to be easily put on and off the truck, and, of course, the rack couldn't cost too much.

The rack we designed and built meets all of these requirements.

The cylinder lock or clamp is the important part, because the

design of this part determines whether or not the cylinders will be easy to handle yet secure.

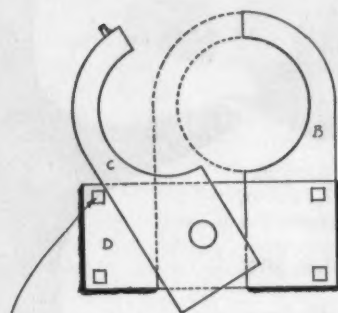
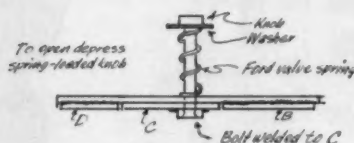
We made the clamp by cutting two pieces of $3\frac{1}{2} \times 10 \times \frac{3}{16}$ in. steel to fit around the neck of the cylinder.

Note the diagram. Parts B and C are placed on part A. B is welded to part A and part D is brought up snug to part C and welded to A. A and C are drilled to take a $3 \times 7/16$ in. bolt. Weld the head of the bolt to C.

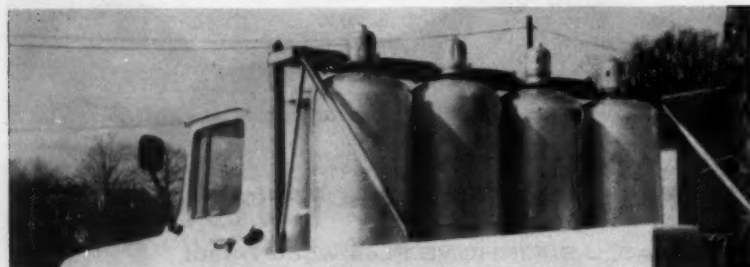
When the clamp is mounted on the 2×8 in. board which has been cut out to take the cylinder, the bolt which has been welded to C is inserted through A and the board. It is then fitted with a Ford 60 valve spring held on with a washer and nut. A Welch plug is welded to the nut to form a knob. The pressure of the spring now holds part C securely in place between B and D. To release the clamp you push down on the knob and open.

We made four of these clamps for this particular rack. Two swing to the right and two swing to the left. The rest of the rack is made of thin walled tubing and oak stakes which fit in the stake sockets on the truck.

A bottom rack was also built to keep the empties from sliding around in the truck. This may be unnecessary as the clamps hold the cylinders tight, but it's easy to make and removes any fear that the cylinders may come loose in transit.



Author Francis Drew received the "Welding Idea Award" from The Lincoln Stabilizer, publication of the Lincoln Electric Co., for submitting this suggestion for an LPG cylinder rack for pickup trucks.



Cylinder rack holds LPG containers securely in place, yet they are easy to take out and put in.

They laughed at the first tank...



nothing will replace the bottle



...but how wrong can you be...



**THE MODERN
MASTER PROPANE TANK**

**Manufactured by THE OLDEST PROPANE TANK
MANUFACTURING PLANT IN THE WORLD**

Back in the 30's they laughed at "those daffy looking tanks." That was when the first Master domestic tanks made their appearance. From the start they were a success, despite the men who thought bottle delivery was the only way. The domestic tank started a new, practical, economical way to deliver gas that built volume . . . simplified dispensing. Master Tank & Welding, believed to be the oldest manufacturer, who is still in business, of domestic propane tanks in the world, will continue to produce THE FINEST TANK MONEY CAN BUY.

SOLD from QUINCY, ILLINOIS or DALLAS, TEXAS



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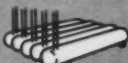
Order your storage and transports from the Master plant nearest you. Shipments made by truck, railroad or low cost river barge.



TRANSPORTS



TANK TRUCKS



STORAGE



DOMESTIC



FILLING STATIONS



FARM CARTS



REFINERY



STEEL FABRICATION

news



Suburban Propane buys LPG business of Verkamp

Suburban Propane Gas Corp. has acquired the L. P. gas business of the Verkamp Corp., Cincinnati, Ohio, from its stockholders, it is announced by Mark Anton, president of Suburban.

Mr. Anton said that the transaction adds some 25,000 consumer outlets to his company's present operation. He explained that this purchase extends Suburban Propane service into the Mid-West and thereby expands metered gas service into that area.

The Verkamps were pioneers in the L. P. gas industry which they entered 30 years ago. Their chemical and anhydrous ammonia operation was not included in the purchase.

Mr. Anton said that the acquisition was financed through an issue of debentures placed privately by the investment banking firm of Eastman Dillon, Union Securities & Co. He said that J. Richard and Joseph A. Verkamp would remain as consultants for a period of time and that no major changes in company policies and procedures are contemplated.

Kirk gas refrigerator gets AGA approval

Kirk Industries Inc. has just won American Gas Association Laboratory approval on its new standard-size gas refrigerator. Kirk C. Kirkorian, who during the past year has been shipping kerosene-operated refrigerators to more than 30 foreign countries, is now beginning to mass-produce the gas model for American homes.

The 10.2 cu ft Kirk gas refrigerator, like the kerosene version, employs a small flame in an absorption system that turns heat into low temperatures for refrigeration, without a motor or other moving parts.

"The gas-operated Kirk," Mr. Kirkorian said, "will be marketed through gas companies and bottled gas distributors throughout the country."

"It works equally well on utility gas or liquefied petroleum gas."

The company, he said, is now working on models of from 5.5- to 7-cu ft sizes, and another of 14 cu ft capacity, as well as a line of freezers and beverage coolers.

L. J. Jiskoot, a Dutch industrialist, who now makes his home in Greenwich, Conn., is board chairman of the new company. George Browning, is works manager and Walter Steiner, sales director of the firm.

The company is located in South Norwalk, Conn.

Gas equipment sales up in 19 of 22 product groups

Shipments of the gas appliance, equipment and accessories industry show gains in 1958 over the preceding year in all but three of 22 product divisions, an official of GAMA reports.

All-time records were established in several categories, including gas-fired boilers for hot water or steam heating, built-in gas ranges, larger-capacity gas water heaters and vented recessed wall heaters, as well as several accessories involved

in the transmission and utilization of gas, the report showed.

Total industry shipments of all forms of gas central heating — representing an increase of 12.1 per cent from 972,100 units to 1,090,300 — gave the industry "a commanding lead" over all other fuels in the house-heating field.

Furnace shipments alone, gained 16.4 per cent in 1958, while the number of boiler units shipped rose 14.7 per cent for a new record. While gas conversion burners showed a 7.8 per cent decrease for the year, shipment of 150,800 of these units nevertheless helped bring the gas central heating total to a new high level.

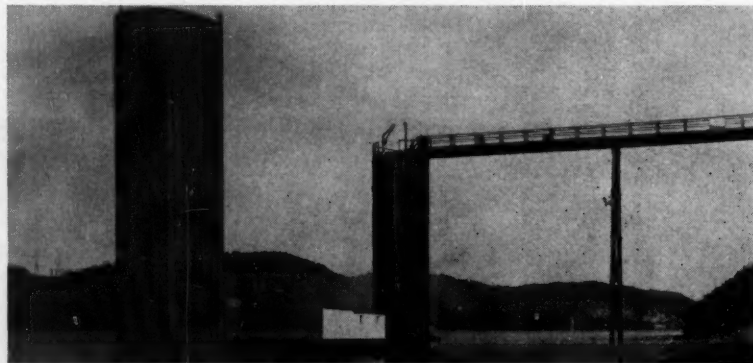
The GAMA report showed that automatic gas water heater shipments had jumped 3.5 per cent.

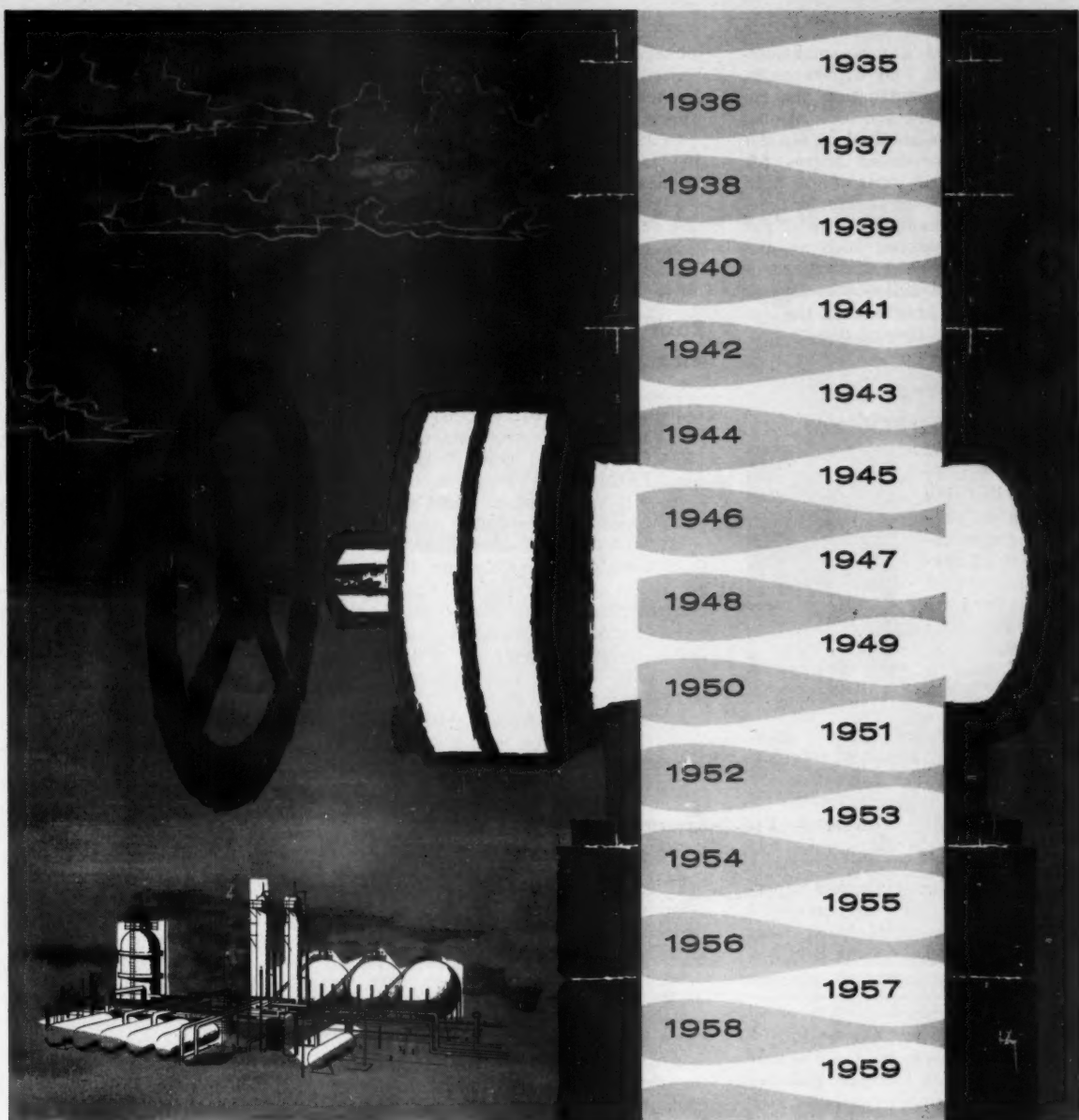
The domestic gas range division achieved a record sale of the increasingly popular built-in models, while over all shipment of ranges, including the traditional free-standing types, fell 6.7 per cent.

Shipments of direct heating equipment rose 2 per cent. Floor furnaces were the only product category, other than conversion burners and free-standing ranges, to show a decrease in 1958. Vented recessed wall heaters, unit heaters and duct furnaces, on the other hand, reported sizable increases.

Gas clothes dryer manufacturers experienced a good year, with sales totaling more than 412,000 units. Makers of gas incinerators, aided

Butane produced and stored at Siloam, Ky., is being shipped to customers on the inland waterways by barges loaded at this nearby cellular steel sheet pile dock. The two-cell dock was built by Dravo Corp., Pittsburgh, for Columbia Hydrocarbon Corp. The sheet pile cells extend 60 ft above normal pool of the Ohio River, thus providing year-round service in an area where river level may vary as much as 50 ft.





Year after year after year...

Over 20% of Shell's LP Gas Distributors have been constant contract customers for Shell Propane—for ten to 25 years without interruption.

Through the years, Shell has maintained a 100% delivery record to all its propane customers. This achievement stems from one important policy:

Shell contracts to sell propane only within its capacity to produce.

Let a Shell Representative show you why it pays to be a Shell Propane contract customer.



SHELL OIL COMPANY



Albany • Atlanta • Baltimore • Boston • Chicago • Cleveland • Detroit • Indianapolis • Los Angeles
Minneapolis • New Orleans • New York • Portland, Oregon • Sacramento • St. Louis • San Francisco • Seattle

by demand for a new smokeless-odorless model, sold 47,900 units.

A boom in construction and remodeling of public and institutional eating places is credited by GAMA with having produced orders for more than 31,000 units of gas-fired commercial cooking equipment.

A check of manufacturers of gas industry accessories, such as meters, valves, burners, controls, regulators and venting, showed plusses to match the progress of the appliance and equipment men.

J & S observes its 25th anniversary

J & S Carburetor Co. is observing its 25th anniversary as a manufacturer of carburetors and regulators for natural and L. P. gas.

Founded in 1934 by S. P. Jones, who is still president and general manager, and E. W. Schadek, refrigeration engineers, the Dallas firm has grown to occupy five buildings today, and sells throughout the United States, to Mexico, Canada and Europe.

The J & S factory makes vaporizers used as original equipment on several makes of farm tractors and fork lift trucks. The firm has



S. P. Jones
President

This year when Dallas was hit with several days of 7 to 10 deg. weather, J & S engineers were able to check cold weather performance of their L. P. gas carburetion equipment right at home. Employees' cars, most of them LPG equipped, are proof that LPG carburetion is good in the coldest weather.

jobbers in most sections of the United States, though the primary market has been the Southwest where J & S is best known.

In 1957, J & S bought the assets of Universal Carburetor Co. of Corsicana, Texas, and assumed the production of its air cleaner adapters and regulators. Recently J & S started making small parts for gas lights.

Root becomes assistant director, AGA Labs

The appointment of Pieter Root Jr., as assistant to director, AGA Laboratories, effective March 1, 1959, is announced by F. E. Hodgdon, Laboratories director. Mr. Root will be located at the Cleveland, Ohio, laboratory.

Mr. Root joined the American Gas Association in January 1947 as a test engineer at the Pacific Coast Branch Laboratories where he subsequently became assistant chief engineer, supervisor of testing, and in 1953, assistant manager.

Born in the Netherlands, he came to the United States in November 1946.

General Controls sets up European subsidiary

The establishment of a European subsidiary by General Controls Co. is announced by William A. Ray, president.

Located in Dusseldorf, West Germany, the new subsidiary of General Controls, G.m.b.H., became operative January 1. At present it is acting as a sales and distribution center for Continental Europe. Expansion of these functions to England is planned.

Mr. Ray pointed out that the second phase of the subsidiary's

operation will include the assembly of General Control's products from shipped-in-parts. He anticipated that by the end of 1959 manufacture of certain General Controls' products on a limited basis will begin.

Mr. Ray stated that establishment of the new facility does not exclude the possibility of continuation of certain European licensee and contract agreements now in effect. General Controls will own controlling interest in the German subsidiary. West German Industrialist, Helmut Kiepe, will become general manager and hold minority interest.

Warren is president of Texas Petro Gas Co.

Forrest S. Warren is to be president and director of the Texas Petro Gas Co., it is announced. Texas Petro Gas, a Houston based company, is planning to engage in the production and marketing of propane, butane, natural gasoline and other products of the natural gas industry.

Mr. Warren indicated that the new company will emphasize pipeline movements as well as product exchanges in order to provide maximum dependability of supply at low cost.

In addition to Mr. Warren, other directors of the company are Henry Groppe, a partner in the firm, Mares & Groppe, Houston chemical consultants, and John H. Crooker Jr., a member of the law firm, Fulbright, Crooker, Freeman Bates & Jaworski.

Mr. Warren has resigned as vice president of the Texas Natural Gasoline Corp. where he was in charge of its Gulf Coast division as well as all company sales to the refining and petrochemical industries.

Chattanooga Royal and Gray & Dudley merge

L. B. Stevens, chairman of Gray & Dudley Co. of Nashville, Tenn., and Ross I. Evans of Nashville, president of Chattanooga Royal Co., Chattanooga, Tenn., announce the merger of operation of the two companies.

Mr. Stevens will continue as chairman of the merged operations and Mr. Evans as president. L. O. Morin Jr. of Chattanooga will serve as executive vice president. L. C. Carroll of Nashville is vice presi-



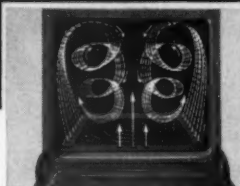
SELL the good cook's gas range ...famous for nearly four generations!



Illustrated: The Universal Supreme
40-inch gas range—Model 9192

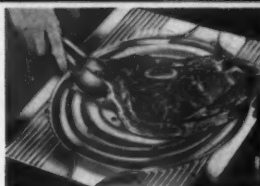
You and Universal sell better together

...because only Universal offers your customers the 3 "most-wanted" features in gas cooking! It's the famous brand name known and trusted for *quality* for 4 generations. Get the facts ... contact your Cribben & Sexton representative now!



"Air-conditioned" Baking

Exclusive Super Oven with built-in circulation control keeps heat better balanced for perfect baking. This even heat is *constantly circulated* ... no hot spots, no cold corners!



Smokeproof Broiling

Melted fats and greases can't smoke or burn because the specially designed broiler grille drains away and traps them in the pan underneath. Kitchens stay cleaner longer.



"Obedient Burner" Cooking

Each self-lighting burner obediently delivers the precise heat wanted, instantly. "Simmer-Save" feature permits an unlimited number of measured cooking heats.

Advertised in leading national magazines

UNIVERSAL GAS RANGES

Cribben & Sexton Company, Chicago 12, Illinois. A complete line of domestic and commercial ranges, built-in ranges, dishwashers, space heaters and clothes dryers.



With the addition of a new 30,000 gal. tank, Modern Equipment Inc., Michigan City, Ind., now has a storage capacity of 78,000 gal. of LPG—the largest storage capacity in either Porter or LaPorte Counties, Ind. Shown at left is the firm's bulk plant with the new 30,000 gal. vessel standing alongside the previous 30,000 and 18,000 gal. tanks. Wayne G. Frey is president, Harry W. Frey is vice president.

dent in charge of the Martha Washington division in Nashville. George M. Childress is vice president and general manager and Robert C. Gundaker is vice president in charge of sales of the Chattanooga Royal division.

The Chattanooga Royal Co. division will continue in the manufacture and distribution of its products under the same management and with the same personnel. The Martha Washington division will continue in Nashville with the manufacture and distribution of its products under its present management, and there will be no change in personnel.

The Chattanooga Royal Co. is a manufacturer of a complete line of gas heating and central air conditioning equipment, and portable barbecue grills. Its products are distributed nationally.

The Martha Washington division of Gray & Dudley Co. manufactures and distributes a complete line of built-in gas and electric stoves, surface units, range hoods, and water heaters. It has also offered and distributed a line of dish washers, built-in refrigerators, and free-standing gas and electric stoves. Its products are distributed on a national basis.

Financial syndicate buys Pennsylvania Range Boiler

Pennsylvania Range Boiler Co., Philadelphia, Pa., has been acquired by a financial syndicate headed by the investment firm of Butcher & Sherrerd. The purchase price was not disclosed.

William K. Goldstein, former executive vice president and treasurer, has been elected president of the new company. He succeeds Morgan S. Kaufman who is retiring after being president for the past 20 years.

Management, personnel and policies of the company will remain the same according to Harry Lasky, vice president in charge of sales, who served as a spokesman.

Besides Mr. Lasky, who was vice president of Raymond Rosen Co. for many years, other officers continuing include: Alfred J. Pellegrini, vice president of production and purchasing; Lee K. Carr, vice president and treasurer; and Richard L. Kaufman and Charles W. Kaufman, vice presidents.

The new owners have announced that Pennsylvania Range will soon acquire additional facilities for the expansion of its production and that new products now under development would soon be introduced.

The company currently manufactures a complete line of gas water heaters under the names of "Bradford" and "Pennsylvania," and also a complete line of gas clothes dryers under the name "Douglas."

Safety of LPG told in Los Angeles Times article

Safety of L. P. gas and LPG containers was explained on the editorial page of the January 19, 1959, issue of the *Los Angeles Times*. The article was actually a letter to the editor of the *Times* by Harold L. Costello, president, Imperial Gas Co., Los Angeles.

"There appears to be considerable misunderstanding by the general public concerning the hazards of liquefied petroleum gases (butane and propane) in regard to the recent fires in the Malibu area. As marketers of propane in this area we are particularly concerned that people be correctly informed regarding this matter.

"The pressure of all liquefied petroleum gases increases with

temperature and, therefore, cylinders and tanks designed for this product are equipped with safety devices to relieve the pressure before it is built up to a point where the vessel would be ruptured.

"These safety devices are fusible plugs which melt when the temperature reaches a designated point and spring tension relief valves that open when the pressure is built up to a designated point.

"In event of a fire the plugs melt, the relief valves open, the gas is released in small volume and burns as a torch, which is harmless. The pressure is relieved in the tank, which removes any danger of the tank rupturing.

"After the Malibu fires there has been considerable comment that butane or propane tanks had blown up. We have investigated this matter and to the best of our knowledge there has not been a single instance of any tanks blowing up during the Malibu fires. There is some noise when the safety devices function, which those unfamiliar with the tanks may have mistaken for explosions.

"There were several instances where it was necessary that the safety devices function, which they did perfectly in every instance."

Cuban LPG production is meeting domestic demands

Imports of bottled gas have ceased now that Cuban production can meet domestic demand, according to the *New York Journal of Commerce*.

Greater Havana consumes 20,000 gal. or approximately 10,000 bottles a month. Annual consumption of the entire island is estimated at 12 million gal., equivalent to a little over 500,000 bottles.

There are five firms which sup-

Combination valve design...

BASOTROL

with

**AUTOMATIC PILOT...
MAGNETIC VALVE...**

PRESSURE REGULATOR

B

Three functions in one compact unit—*automatic pilot, automatic main valve, and pressure regulation*—mark the Basotrol valves as among the most useful gas appliance controls.

Thermoelectric Baso power units are of two types for either complete shutoff of main and pilot burner or main burner shutoff only. Both types prevent gas from reaching the main burner during the resetting cycle.

Supplied for live or low voltage service, the Basotrol bipolar magnetic valve is spring loaded for strong sealing and positive closing and has a molded rubber valve disc. Voltage types are 20v., 115v., and 208-230v., a.c.

Three position assembly of both Baso power unit and Basotrol bipolar magnetic unit adds to convenience in making wiring and tubing connections. By turning the units, connections can be made at either side or at the ends over the manifold.

Models without the regulator are available for use with LP gas.

For more information about Basotrol, WRITE

BASO INC.

DEPT. SB-2

MILWAUKEE 1, WISCONSIN

MODEL	INLET AND OUTLET	OUTLET PRESSURE RANGE		CAPACITY NAT. GAS @ 1" P.D.	REGULATION CAPACITY	
		MAX.	MIN.		MAX.	MIN.
GAT*	1/2" x 3/4"	4"	2"	118,500	118,000	11,600
CAW	3/4" x 3/4"	4"	2"	118,500	118,000	11,600
GDT	3/4" x 1/2"	4"	2"	146,000	145,000	14,500
GDT200*	1/2" x 1/2"	4"	2"	146,000	145,000	14,500
GDX4	1/2" x 1/2"	4"	2"	177,000	170,000	17,000
GDX4 () 200*	3/4" x 1/2"	4"	2"	177,000	170,000	17,000
GDX5	3/4" x 3/4"	4"	2"	203,000	192,000	19,200
GDX5 () 200*	1/2" x 3/4"	4"	2"	203,000	192,000	19,200

*100% shutoff power units.

ply the bottled gas on a national basis, while about 20 firms are engaged in limited local supply.

At present three refineries — Texaco in Santiago de Cuba and Esso and Shell in Havana—manufacture the gas.

Phillips is forming a foreign sales department

A foreign sales and development department is being formed by Phillips Petroleum Co. to be headquartered in New York City with John Getgood as manager, according to K. S. Adams, chairman, and Paul Endacott, president of Phillips. Mr. Getgood was general sales manager of the company's sales department prior to his promotion.

The officials said the new department initially will engage in worldwide sale of crude oil. It ultimately also will be responsible outside of the United States and Canada for the sale of all Phillips products, patent licenses and technical services, the purchase and resale of petroleum products, and the development of manufacturing, distribution and sales projects.

Most of Mr. Getgood's 30 years of service with Phillips has been in the sales department. He has

been general sales manager since July 1956 and previously had been regional manager, assistant sales manager and senior assistant sales manager in the company's Bartlesville headquarters. He also served for 16 years as assistant division manager in the Chicago sales division.

AMA book provides sales report forms

Concise and effectively designed sales forms are used by many companies to insure a steady flow of information. To give a comprehensive view of efficient sales reporting, "Reporting Sales Data Effectively," a new American Management Association book, reproduces 175 of these forms.

Over 30 leading companies have given AMA permission to reproduce the best examples of efficient paperwork in their sales departments.

To increase the usefulness of this collection, Elizabeth Marting, author of the book, has organized the forms into eight sections, each dealing with one basic aspect of sales management. The accompanying text explains each form and suggests ways in which these proven materials can be adapted

to the special requirements of each sales organization. An additional section presents a functional breakdown of the most successful sales forms used by four leading companies.

The book is available through Department 46R, AMA, 1515 Broadway, New York 36, N. Y. It sells for \$12. AMA members' price is \$8.

J. N. Good, Suburban Propane Gas Corp., dies

Joseph N. Good, regional manager of Suburban Propane Gas Corp.'s north New Jersey and central New York districts, died January 2, after a brief illness.

Mr. Good, who had a record of more than 27 years in the L. P. gas industry, started with Phillips Petroleum Co. at Hudson, Ohio, as an operations supervisor. Since his affiliation with Suburban Propane in 1945, he served as manager at several Connecticut and New Jersey districts and in 1950 was promoted to regional manager. He was an active member of L. P. gas associations in New Jersey, New York and Pennsylvania.

Fort Lauderdale will again host "Mrs. America" meet

The 21st annual "Mrs. America" pageant, featuring the national finals of the "Mrs. America" home-making contest, will be staged in Fort Lauderdale, Fla., June 11-23, it is announced by Bert Nevins, managing director of the pageant.

As in previous years, state contests will be conducted by gas utility companies, with cooking on gas ranges one of the requirements. The Whirlpool Corp. will supply RCA-Whirlpool gas ranges and other gas appliances at both the state and national levels.

Robertshaw-Fulton Controls Co. will participate in the promotion for the sixth straight year. Whereas in the past, the AGA sponsored the contests at the local and state levels, this year Mrs. America Inc., owners of the registered "Mrs. America" name and founders of the contest, will work directly with gas utilities in many states and with television stations, supermarkets and department stores in others. H. Hansell Hillyer, president of the Savannah Gas Co., Savannah, Ga., is serving as chairman for the participating gas companies.

Important reprints available while they last

A limited supply of selected reprints are available from BUTANE-PROPANE News, while they last, at the prices indicated below.

These important articles were originally reprinted because of the demand for copies following their publication.

Agricultural: Agricultural flaming (March 1956), 16 pages 25 cents; Propane cuts cost of weed control on railway rights-of-way (March 1956), 2 pages 10 cents; and How to slice yourself a share of the stock tank heater market (November 1957), 2 pages 10 cents.

Industrial: New savings in propane torch metal cutting (July 1957), 2 pages 10 cents.

Power: Full report on Chicago's 1050 propane buses (July 1956), 8 pages 20 cents; LPG precools California crops (March 1956), 4 pages 10 cents; Small bus fleet articles—San Antonio and Wichita (August and September 1956), 6 pages 15 cents; My same-sized

crew services twice the fleet since conversion to LPG (September 1957), 2 pages 10 cents; Have a coke, courtesy of LPG (November 1957), 4 pages 10 cents, and Illinois taxicab fleet saves \$60 per month per cab with LPG (March 1958), 2 pages 10 cents.

General: The house trailer problem is nearer solution—a report on the safe and correct installations of fuel systems and appliances in today's mobile homes (July 1957), 6 pages 15 cents; Trial by fire—a report on the Malibu, Calif., \$1 million fire and how propane came through with flying colors (March 1957), 2 pages 10 cents, and The sale isn't made until the cash is collected (January 1958), 4 pages 10 cents.

These articles are available at quantity discounts (same reprint), 10 to 49 copies, 20 per cent; 50 copies and up, 30 per cent. Checks should accompany order to BUTANE-PROPANE News Reprints, 198 So. Alvarado St., Los Angeles 57.

Downright warm!

*Right, Ma'am!
Warm right down to the floor level.
That's Day & Night Panelray
heat for you. Best in the business.
Ask anyone.*




Day & Night's "RC" Panelray Wall Heater


offers luxurious comfort for the most modest budget. Easy to sell. Installs easily and quickly between wall studs. **Any** DAY & NIGHT Panelray is great for building LP gas volume. It's a steady, "level-out" user of gas... yet retains the economy your customers like. The more Panelrays you sell, the more LP units you have operating for your profit. Get the facts on them all: RC Panelray, economy Sahara Wall Heater, Floor Model Panelray, and the famed FA Panelray, the forced air heater that hides in the wall. Write to: DAY & NIGHT Manufacturing Company, 855 Anaheim Puente Road, La Puente, California.





Why SCROUNGY GASMAN turned down a good thing...



SCROUNGY GASMAN was a very  short-sighted

LP Gas dealer. When he looked over Hydrotherm's wet-


heat  equipment*, he saw what fuel misers these


boilers were. He preferred a  gas-gobbler that

would keep his  fuel deliveryman busy. Hydrotherm's


 big water passages and simple  circulation


system were so foolproof he would miss those lovely

midnight  service calls. And finally, because


Hydrotherm comes pre-wired and assembled 

in a light, compact  package†, he might lose

some  profits on shipping and installation.


So SCROUNGY, being short-sighted  turned

down Hydrotherm . . . but his prospects turned him

down for  oil (excuse the expression).

MORAL: In today's competitive market, the way to
sell more gas is to sell the best gas-fired equipment.

 Write for full  information to

HYDROTHERM Dept. 13-B-P Northvale,  New Jersey

*Hydrotherm boilers, HydroFin baseboard radiation units, HydroVector & HydroChiller heater-coolers, Multi-Temp
†Hydrotherm achieves a higher heat transfer per pound of cast iron than ever before possible
‡Compact, simple Hydrotherm packaged hydronic (wet-heat) systems are competitive with warm air installations

Retail site selection analyzed in new book

"The Selection of Retail Locations," a study of site selection and business volume estimating for establishments selling consumer goods or services, is now available.

Written by Richard L. Nelson, a leading real estate economist, the 422-page book was published by F. W. Dodge Corp.

Of special interest is Mr. Nelson's treatment of retail compatibility. He shows in detailed tables how various types of retail outlets can have beneficial, neutral, or negative effects upon each other.

The contents of the book are arranged into five major sections: The Influence of Location on Retailing, The Selection of a Location, The Technique of Estimating Business Volume, What About Shopping Centers? and New Trends in the Economics of Location.

The book is available through F. W. Dodge Corp., 119 West 40th St., New York 18. Price—\$9.

Ad media symposium held at Dearborn's meeting

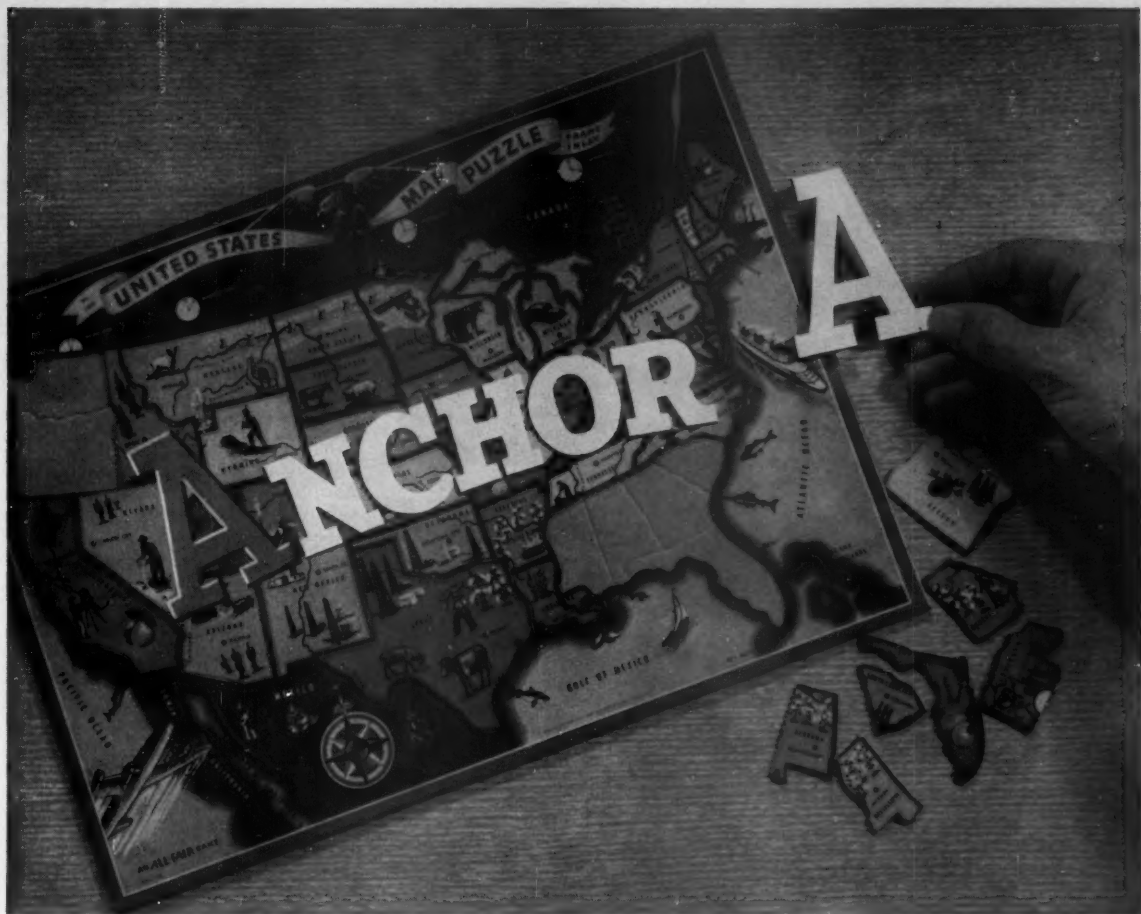
An advertising media symposium was a featured event at the national sales meeting of the Dearborn Stove Co. at Western Hills Inn, between Fort Worth and Dallas. Purpose of the discussion was to more closely acquaint Dearborn's salesmen with the various media and their individual advantages in Dearborn's national advertising program.

E. S. Kleinmann, vice president and sales manager of Dearborn, introduced the panel to more than 50 Dearborn sales representatives from all parts of the U. S. Panel members were: M. C. Via of Hearst newspapers; Riley Robbins of Middleton Inc., outdoor advertising; Wallis Ivy of Avery-Knodel Inc., television station representative; and Clyde Melville, president of Clyde Melville Inc., radio station representative. Moderator of the discussion was J. B. Taylor, president of Taylor-Norsworthy Inc., Dallas advertising firm.

Each panel member outlined the advantages of the medium he represented, and explained how the medium could be used most effectively and economically.



BUTANE-PROPANE News



...fits your picture...

WHEREVER YOU ARE . . . Anchor markets petroleum products nation-wide, and in Mexico and Canada. You can get fast, dependable, red-tape-cutting service by calling directly to headquarters.

WHATEVER YOUR NEEDS . . . Anchor's vast fleet of tank cars covers the nation with efficient, flexible service. Anchor underground storage offers millions of reserve gallonage.

COMPLETELY COMPETITIVE . . . An Anchor contract offers advantages *only*. Customers are our most important product, and we want to keep them . . . happy!

WITH SPECIALIZED SERVICES . . . Anchor's engineering, transportation, financial, and business specialists are at your service . . . as near as your phone. Give us a call and see how Anchor fits your picture . . . Tulsa, CHerry 2-7261.

ANCHOR PETROLEUM CO. — TULSA

SALES OFFICES: Toledo, Sioux City, Shreveport, Hattiesburg, Gulfport, Houston, Midland, Long Beach, Calgary.



Admiring the Corona space heater, one of the major product lines recently unveiled by Perfection Industries are (left to right), Harold Dean, district manager; Bill McAmblay, district manager; John Gardner, vice president Waynesborough, Ga., manufacturing operation; Ed Donaldson, appliance sales manager; and Paul Dressler, district manager.



Perfection unveils its 1959 appliance line

New appliance lines introduced by Perfection Industries, a division of the Hupp Corp., were previewed recently by representatives of the company's export and domestic sales staffs at its annual sales conference held recently in Cleveland.

Carl W. Millsom, vice president,

sales and advertising for Perfection, chose "The Forward Trend" as a fitting theme for the week-long meeting, during which he expressed confidence in the business outlook for 1959 and predicted, "the advances made in the new Perfection products will provide the greatest sales gains in our 70-year history."

A separate session was devoted to each of the major product lines,

which included among others new gas space heaters and wall furnaces, portable heaters, ranges and water heaters.

Marketing plans previewed at John Wood sales meet

A comprehensive sales and advertising program was detailed by W. Glenn Oslin, vice president and general sales manager, at John Wood Co.'s heater and tank division annual sales meeting. The meeting was held January 12-14, at the Grand Hotel in Point Clear, Ala.

The company's program calls for national trade advertising and extensive local merchandising support for distributors, retailers and dealers. The 1959 marketing campaign will point out the advantages of handling a full line of automatic water heaters and heating equipment.

J. H. Gotwals, senior vice president and general manager, told the meeting that John Wood's unit sales volume of water heaters and home heating equipment units increased substantially during 1958.

New products, extending the full John Wood line, were unveiled for the sales staff.



The SENTRY Gaslite...
offering decorative...yet **ECONOMICAL**
outdoor lighting

Companion for today's trend to **OUTDOOR LIVING ...**
gracious lighting at a popular price.

The thrifty SENTRY is a new model Gaslite by Arkla, using natural, manufactured, propane or butane gas for fuel.



Write ARKLA, Gaslite Division, Dept. H,
Shannon Building,
Little Rock, Arkansas

Wheatley joins distributor to promote LPG sales

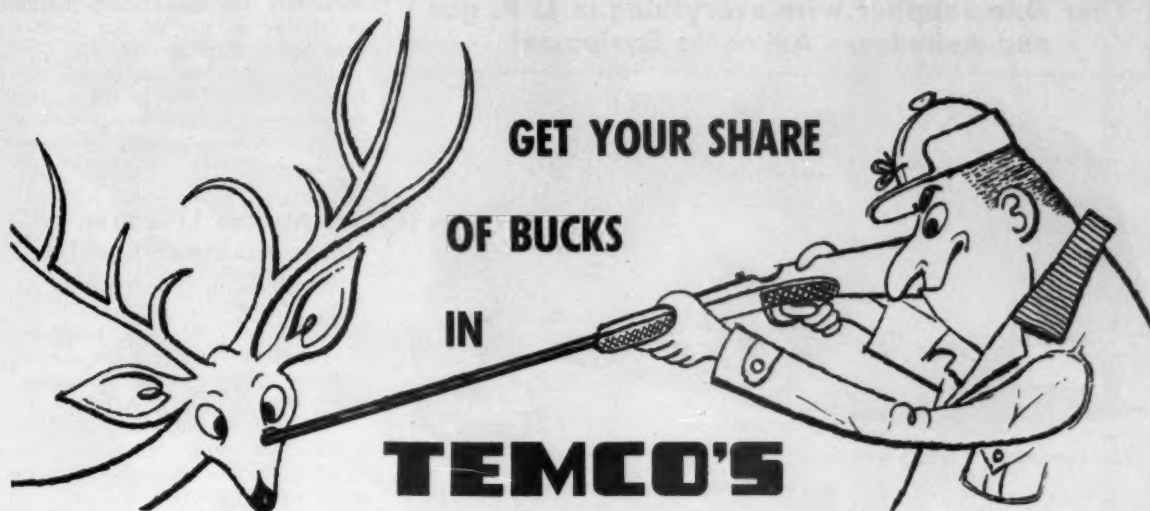
Tennessee Liquefied Gas Co. is expanding its sales and service activities for commercial and industrial LPG-fired equipment.

Robert L. Wheatley, an engineer with heavy experience in motor fuel applications, recently joined the company as vice president and industrial sales manager. He will promote sales and service in both industrial and commercial fields.

Laundry equipment moving back to the kitchen

More than 46 per cent of consumers using the new Norge combination washer-dryer have installed the appliance in the kitchen, according to a survey of owners made by Norge division of Borg-Warner Corp. Only 15 per cent operate it in the basement and 31 per cent in the utility room.

Another point covered in the survey was the reasons for buying. Almost half (45 per cent) of the



FREE "DOLLARS for DEALERS" PROMOTION

Ask your Temco gas heating distributor about this "out-front" dealer promotion inspired by the

"out-front" CITATION LINE for '59

During the first six months of 1959 Temco gas heating dealers across the country will receive FREE "DEALER-DOLLARS" which they may spend during the last six months of 1959. (These bucks are pre-shrunk and are worth 100 pennies per dollar). Join the happy hunters now and cash in . . . your Temco distributor has all details.



TEMCO, inc.

NASHVILLE 9, TENNESSEE

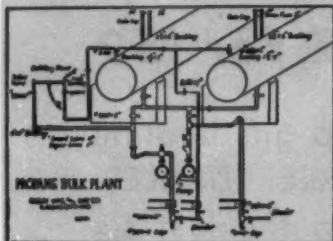
Ask your **TEMCO** distributor for full details

**Your One Supplier with everything in L. P. gas
and Anhydrous Ammonia Equipment**



"The Loadmaster" LPG Truck Tank

PASLEY-DESIGNED Truck Tanks (see above and right) were first to feature all controls from one location. All operation is from one point—rear compartment.



BULK PLANTS Pasley LPG and Ammonia type installations—a turnkey job or engineering for your own installation. Write, wire or call.

Also a complete line of accessory equipment.

"Pastels By Pasley"

COLOR—The Modern Trend! Bring your LPG Equipment up to date. Available in the following colors . . . (write for information)

Blush Peach	Smoky Grey
Sunshine Yellow	Seafoam Blue
Mustard Lime	Wedgewood Green
Eureka Orchid	Rose Beige
Lake Blue	Desert Rose



EVERYTHING IN LPG AND ANHYDROUS AMMONIA

The Pasley Mfg. & Dist. Co.

401 East 11th Street • Kansas City, Mo. • Tel. Victor 2-2366

owners mentioned a reason associated with the appearance, design or styling as one of the factors that prompted them to buy.

Other frequently mentioned reasons were confidence in the dealer, recommendations from others, and previous ownership or use of Norge appliances.

**So. African LPG firm
issues consumer booklet**

"Handigas in the Home," a 41 page booklet for information of its L. P. gas customers, has been published by Handigas division of African Oxygen Ltd., Johannesburg, Union of South Africa.

Designed to increase customer satisfaction with Handigas, the booklet provides the customer with much useful information.

Contents include such headings as: About Handigas, What is So Wonderful About Handigas?, For Your Safety, Your Handigas Installation, Handigas Cylinders, How to Change Over Your Cylinder, The Question of Cost, The Price of Handigas, How Long Will Handigas Last?, 24 Ways to Save Handigas, Guide to Oven Time & Temperature, Caravans (trailers), Your Handigas Distributor, & Appliances. This last section—appliances—is actually a catalog of all LPG appliances available from Handigas.

**Dever predicts upward
trend for instrumentation**

Increased activity in industrial instrumentation is forecast for 1959 by Henry F. Dever, vice president of Minneapolis-Honeywell Regulator Co., after what he calls a year of widely divergent trends in the application of automatic controls.

An improved economy, heavy emphasis on research, probable increases in defense spending, and an upward swing in capital outlays by industry were cited as forces stimulating wide interest in the "tools of automation."

"Capital spending during a period of recession and immediately thereafter is pointed more toward modernization than to new capacity," Mr. Dever said.

He cited a recent survey reporting that \$70 billion would be needed to replace obsolescent equipment in the manufacturing, mining, petroleum, electric and gas, and transportation and communications industries.

Helps my reputation for quality heating work



suburban COUNTER-FLO WALL HEATERS

It heats better — is more compact and better looking

When a heating job is complete the best advertising I can get is the complete satisfaction of the owners. This Suburban Counter-Flo has a fan that forces air downward and heats floors first . . . continuous air circulation heats all corners of a room. In addition, this is the most compact, best looking wall heater I've seen. It's available in either single or dual-wall models up to 50,000 BTU. As a clincher, *the heat-exchanger is guaranteed for 20 years*, and Suburban is approved by the American Gas Association! Mighty attractive price, too. It will pay you to get the details. It did me.

For a Low Cost Gravity Wall Heater You Can't Beat Suburban Either!

Suburban's Gas-Fired Gravity Wall Heater has more value at a lower price than any other wall heater. Easier to install too, for no header plate is needed. Just check the coupon for all the low-price details.

Floor Furnaces. The same high quality and low price is available in Samco Floor Furnaces. If you *ever* use a floor furnace, get the information on Samco.

suburban

Counter-Flo Wall Heaters

by the makers of famous Suburban Built-in Ranges

Samuel Stamping & Enameling Co., Dept. BP-39 Chattanooga, Tenn.
Rush complete details on: Counter-Flo Forced Air Wall Heaters ☐
Gravity Wall Heaters ☐ Floor Furnaces ☐

Name _____

Company _____

Address _____

City _____

State _____

American-Standard exhibit at National Housing Center

An educational exhibit installed by American-Standard Air Conditioning division features both the need for zone controlled heating as shown by a nationwide survey of over 2000 homes, and how this need can be solved with a two-furnace system.

The exhibit is on display in the "Special Exhibit" area of the NAHB National Housing Center in Washington, D. C. This display area is devoted to new ways and



Nels Severin, president of the National Association of Home Builders, discusses the advantages of two-furnace balanced heat with W. H. Baker, vice president, American-Standard Air Conditioning division.

new ideas in the field of building.

The central panel of the exhibit illustrates the advantages of a two-furnace installation vs. a single unit, and how two furnaces could be of use in split levels, ranch type houses, and two story houses.

Summer air conditioning is also covered in the display.

NEWS NOTES

General Gas Corp. and its wholly-owned subsidiary, Delta Tank Manufacturing Co. Inc., moved into new joint executive offices in the Commerce Bldg. at 300 Laurel St. in downtown Baton Rouge, La. Announcement of the move is made by Hal S. Phillips, president. Executive offices of the two firms previously were located several miles apart.

M. W. Morris, vice president in charge of sales of the Welbilt Corp. Inc. announces that the company moved its Chicago headquarters to the Merchandise Mart. The company is now occupying offices 11-115A covering 2300 sq ft. H. U. Mann and Al Teller are the Chicago sales representatives.

Huntsville (Ala.) Butane Gas Co. broke ground recently for a \$30,000 office and display building. The one floor building will be 50 by 80 ft, concrete block with a brick front, according to Jack Cope, co-owner. About 30 ft in the front of the building will be used for displaying gas appliances and the back will house four different offices

BEACON
is a
STAR PERFORMER
in its field, too!
BUTANE-PROPANE

- ★ QUALITY PRODUCTS
- ★ QUICK DELIVERY
- ★ BETTER SERVICE
- ★ DEPENDABILITY

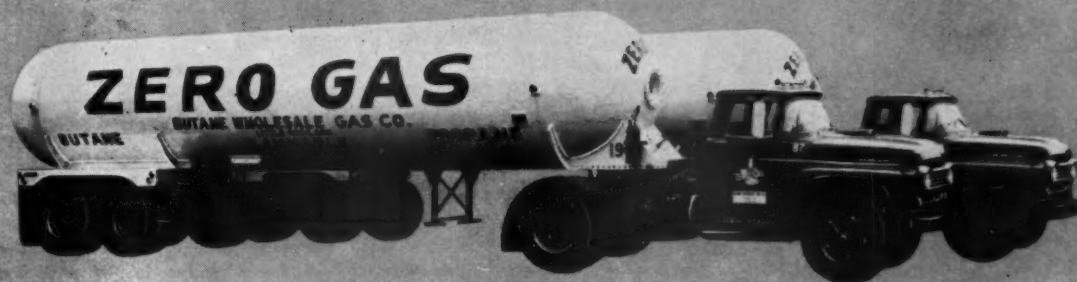
It takes skill and "know how" to stay at the top in any field . . . and that's the reason that Beacon is a star performer in the Butane-Propane field. You will want to see for yourself, so try Beacon on your next Butane-Propane order.

**PHONE
LU 5-5553 TULSA**

BEACON
PETROLEUM COMPANY
P. O. BOX 2100 • PH. LUther 5-5553 • TULSA, OKLA.

Operating experience proves

Mississippi Tank T-1 Transports
haul more payload at less cost!

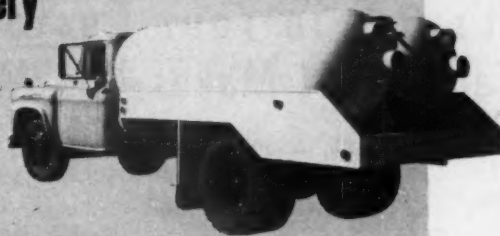


Butane Wholesale Gas Company of Little Rock operates 14 big transports over Texas, Louisiana and Arkansas. Early in the season when the time came to add to their fleet, the company chose Mississippi Tank T-1 Transports.

"We were looking for units that would haul as much gas as possible at the lowest cost," says Mr. Louis W. Bullock, president. "Now, after several months' operating experience, we're convinced we've found the answer. As a matter of fact, we're so impressed with the performance of our Mississippi Tank Transports, we recently placed an order for two more."

"Paymaster" Twin-Delivery

Streamlined and beautiful, this unit is quality-engineered for perfect balance, maximum payloads and long, efficient service. Available with rear cabinets and full skirting in capacities from 1200 to 2300 wgs.



***Let us show you how T-1 Steel equipment can pay for itself
in a matter of months. Just use this coupon...***



**MISSISSIPPI
TANK COMPANY**

INCORPORATED

Hattiesburg, Miss. Tel. JUniper 3-0226

MISSISSIPPI TANK COMPANY, Inc.
Hattiesburg, Miss.

—Show me how Mississippi Tank T-1 steel transports can pay for themselves in just a few months.

Also send information on:

- Paymaster Twin Delivery
- Titan T-1 Delivery (3,075 wg cap.)
- Single Barrel Delivery Units
- Bulk and domestic storage tanks

NAME

COMPANY

ADDRESS

CITY and STATE

and storage area. It will be equipped with modern heating and air conditioning units.

Prime Gas & Equipment Corp., Queens, N. Y., has been granted charter of incorporation listing capital stock of 200 shares no par value. Directors include Marvin Sibner, Blanche Sibner and Ruben Sibner, all of Queens.

Westchester Gas Service Inc., White Plains, N. Y., gas and electric services and equipment, has been granted charter of incorpora-



It's Gas in Your Customers' Tanks that Makes You Money!

You can't make any money as long as gas stays in *your* tanks. It has to move to bring in the cash. That's why Sinclair has designed the Sinclair TRU-FLAME promotion program — a plan that will help move the gas from your tanks to your customers' tanks.

Add to this service, finest quality products, on-time delivery, and engineering service and you have a package that makes your contract with Sinclair a happy and profitable arrangement.

- Write or call today for complete information on the Sinclair TRUFLAME plan to help you sell more gas more profitably.



SINCLAIR
OIL & GAS COMPANY

LIQUEFIED PETROLEUM GAS SALES DEPARTMENT

SINCLAIR OIL BUILDING — TULSA 2, OKLAHOMA

Telephone LUther 4-0411

Believed to be one of the largest of its kind in the world this transport rolled onto the roadways recently with a 10,843 gal. capacity. Manufactured for the O'Connor Oil Co. of Fond du Lac, Wisc., by Custom Head Inc. of Springfield, Mo., the 50 ft unit will be used to transport gas direct from the pipeline to customers.

tion listing capital stock of 500 shares no par value. Directors: Henrietta Heller, Kathleen Baffi, and Sidney H. Reich, White Plains.

The Peerless Heater Co., Boyertown, Pa., announces the appointment of John J. Weeks, P. O. Box 4034, 1527 E. 4th St., Charlotte 1, N. C., as representative for both Peerless cast iron boiler heating equipment and warm air furnaces. Mr. Weeks will represent the company in North and South Carolina.

Consolidated Freightways Inc., Menlo Park, Calif., has contracted to buy the stock of Barlow's Service Inc., Denver, Colo., a common carrier of bulk petroleum products with intra-state operating rights in Colorado, Wyoming, Utah and New Mexico. According to the announcement, no changes in personnel are contemplated and Barlow's Service would continue to be operated from its Denver headquarters if the purchase is approved by ICC.

The National LP-Gas Council advises that the originally scheduled May-June \$100,000 Sweepstakes promotion will be delayed until the Fall months of August-September. The reason—McCann-Erickson, the Council's agency, advised they will be unable to button up negotiations for the prize home and prepare local-level kit material in time to meet the time-table for the May-June date.



WILLIAM H. JACKSON has been appointed sales manager for General Gas Light Co.'s line of Opalite gas lamps, it is announced. Associated with the company for 12 years, Mr. Jackson was formerly assistant sales manager in the gas lamp division.



W. H. Jackson
General Gas



D. J. Davis
Gar Wood

DAVID J. DAVIS is the new director of sales and advertising for Gar Wood Industries Inc., according to a recent announcement. Mr. Davis has served in many sales capacities since joining the Buckeye Traction Ditcher Co. in Findley, Ohio, in 1940 and came with Gar Wood when the latter acquired Buckeye in 1946. Previously he has held the positions of eastern district sales manager and tractor equipment sales manager and assumes his present position after serving as general sales manager, construction machinery.

G. L. LORY has been promoted to general sales manager of Phillips Petroleum Co. He succeeds JOHN GETWOOD, advanced to manager of the company's new foreign sales and development department. G. E. GLATFELDER has been promoted to senior assistant sales manager in Phillips sales department, G. J. MORRISON to an assistant sales manager position, and J. E. CHISHOLM to succeed Mr. Morrison as division sales manager at Atlanta, Ga. Mr. Lory has been an assistant sales manager since March 1955 and previously served three years as a regional manager in Bartlesville. He earlier spent 20 years in

3400 your right and ready magic number for mobile homes, camps, cottages and boats.

Here's good news for forward-looking dealers everywhere . . . Weatherhead now offers factory-assembled 20 lb. mobile home cylinder packages.

Now just one phone call, wire, or letter to Weatherhead will set you up for bigger-than-ever sales volume to owners of trailers, cottages, camps or boats. You'll find customer service greatly simplified with these factory-assembled units completely tested and ready to go. It's worth your while to investigate . . . you'll find too that Weatherhead one-source responsibility and greater purchasing efficiency are a big plus in your favor!

Here's
what the
3400
package
includes:

- 2 . . . 20 lb. ICC Cylinders
- 1 . . . Tee Check Manifold*
- 1 . . . LP Gem Regulator
- 2 . . . Pigtails
- 2 . . . Cylinder Valves
- 1 . . . Double Cylinder Rack

*Other changeover combinations also available.

Get full details from your nearest Weatherhead Representative or write:

WARRANTY
PROTECTION ON
ALL WEATHERHEAD
LP-GAS PRODUCTS

THE WEATHERHEAD COMPANY
LP-Gas Equipment Division
Cleveland 8, Ohio

SINCE 1919 . . . 40 Years of Manufacturing Experience

the Des Moines, Iowa, division serving as assistant division manager for eight years.

CHARLES ALDEN and G. KING KELLS, sales representatives of Neptune Meter Co., have been promoted to branch manager positions. Mr. Alden will be responsible for all activities of the company throughout the northwestern and western region of the United States. Operating out of the firm's branch office headquarters in Portland, Ore., he will direct sales, distribution and service operations

regarding "Red Seal" petroleum meters. He joined Neptune in 1950. Mr. Kells, who has been appointed manager of the firm's San Francisco-Bay Area branch, will make his headquarters in Millbrae, Calif. He will be responsible for all sales, distribution and service activities relating to Neptune products throughout the counties of northern California. He joined the firm in September 1947.

A. T. ENK has been appointed manager of the design department for Surface Combustion Corp. He

joined Surface 27 years ago. He succeeds F. R. COLBY, who has been named consultant to the chief engineer serving on special assignments.

JACK B. LARAMY has been appointed manager of sales of the Worthington Corp. He joined the firm in 1929. He served as a general line salesman and then as assistant manager of the Chicago district office until his appointment in 1951 as manager of the corporation's marketing research department. For the past three years, he has served as assistant manager of the marketing division and eastern regional sales manager.



COLUMBIAN'S "SAFE-T-TWIN" does TWO jobs... *Two Ways Better!*



Now you handle *both* butane and propane deliveries *better* and *more easily* from the Columbian "Safe-T-Twin" tank truck unit. Both in heavy, hectic city traffic and on "off-the-pavement" rural fuel deliveries, the specially designed, small-diameter (42" I.D.) twin

tanks with their low center of gravity give stable balance, easy maneuverability and ideal handling. (*Wherever you go, Columbian serves you best!*) Tanks shown above total 1500 gallons capacity, but are available in sizes to suit your need.

"SAFE-T-TWIN" SPECIFICATIONS: ASME 1956 Code working pressure of 250 lbs. Hemispherical heads and countersunk relief valves. Tanks manifolded on liquid and vapor and equipped with 2" Viking KK 200 Propane pump with mechanical seal. 1 1/4" Neptune 433 meter with printing counter. Motor driven dual reel. Liquid and vapor hoses serve either tank, are housed in rear cabinet. Complete ICC lighting and wiring.

WHAT DOES YOUR BUSINESS NEED?

The "Safe-T-Twin" and LP "Advertiser" tank units are two examples of fast, efficient Columbian delivery equipment so important to profit in the LP Gas business. Columbian makes

custom units of any size—semi-trailer transports and delivery truck units—to meet the requirements of your particular business.

COLUMBIAN LP "ADVERTISER"

Clean, modern design advertises you as an up-to-date distributor. Compact rear double door cabinet houses all controls, fittings, meter, 150 ft. 3/4" hose on power reel. Fully equipped with ICC lights and wiring. Meets all state and federal requirements. Capacities from 1200 to 2500 gal. (Capacities above 2000 gal. should be on dual-axle trucks.)



Call in Columbian.

Write for specification sheets and quotations, or for an engineering estimate on a custom-built unit. Tell us your requirements. Write or phone.

Reg. U.S. Pat. Off.



COLUMBIAN STEEL TANK COMPANY
P. O. Box 4048-C
Kansas City, Mo.

STEEL, Master-Crafted by Columbian... First for Lasting Strength



J. B. Laramy
Worthington



W. C. Fisher
Norge

WALTER C. FISHER has been appointed director of marketing and JAMES D. DOUGHERTY sales manager, in key Norge division of Borg-Warner Corp. appointments. Mr. Fisher will be responsible for all Norge home appliance advertising, merchandising, home service and other marketing operations. Mr. Dougherty will direct all distributing and field sales force operations. Both men have been with Norge since 1954, in a number of sales and merchandising positions.

BARNEY D. WILMOTH has been appointed field engineer for Clifford B. Hannay & Son Inc. Mr. Wilmoth, who flies his own airplane while on business trips for Hannay, will specifically serve the East Central and Mid-West districts, but will be available for calls anywhere in the United States and Canada.

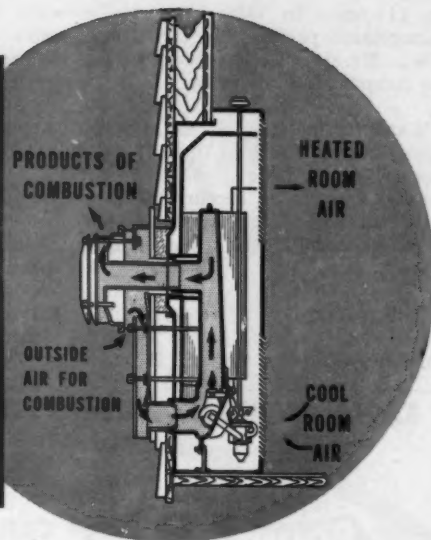
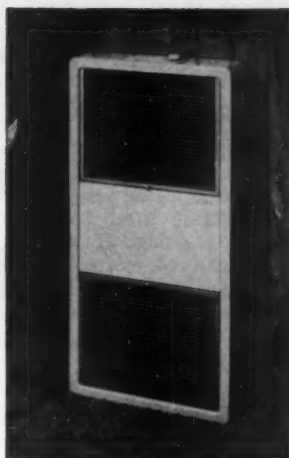
DON C. LIVINGSTON has been named manager, two-way radio sales, of a 10-state southern area by Motorola Communications & Electronics Inc. He had been regional manager in Kansas-Missouri and southern Illinois and is succeeded in this position by WILLIAM H. HAWKS, formerly a zone manager in Kansas City, Mo. Mr. Livingston has been with Motor-

SAF-AIRE
SAFETY- SEALED

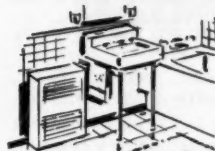
AUTOMATIC GAS HEATING



For
enclosed
porches
and
added
rooms



THE EASY—AND PROFITABLE—WAY TO ADD HEAT



For bathrooms



For garages



For workshops

No chimney...no ducts...no electricity needed!

Here's the safe, economical and easy way to provide *extra heat* wherever needed. Saf-Aire Gas Heaters are profit makers in any community because of their numerous applications.

The diagram above shows the "safety-sealed" design of Saf-Aire Gas Heaters. Gas is burned in a ceramic lined steel chamber, completely sealed from the room air being heated. Sealed vents through the wall supply outside air for combustion and discharge products of combustion directly outdoors. That's why Saf-Aire is approved for bedroom installation.

Saf-Aire units are space-savers—extend only 5 1/4" into the room. They're handsomely finished in baked enamel—harmonize with any decorative scheme.

Write today for information on a Saf-Aire dealership.

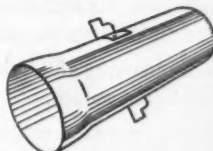
EXCLUSIVE FEATURES...TESTED AND PROVED IN OVER 10 YEARS' OPERATION IN THE FIELD



Saf-Aire units extend only 5 1/4" into room.



Easy installation. Rectangular opening simplifies installation in any type wall.



Terminal exhaust tube is stainless steel—will not rust or corrode.



Loosening two screws permits removal of entire burner assembly and controls. Easily inspected and serviced.



Air for combustion enters the unit at bottom of burner assembly. Positive air direction minimizes pilot outage.

Symbol of
SW
Excellence

STEWART-WARNER

HEATING AND AIR CONDITIONING DIVISION • Dept. AT-39, Lebanon, Indiana

THESE ARE THE QUALITY PRODUCTS OF THE STEWART-WARNER CORPORATION

ALEMITE Industrial and Automotive Lubrication Equipment, Lubricants and Chemicals such as CD-2, KLEEN-TREET and COOLING SYSTEM CONDITIONER • STEWART-WARNER Electronics Equipment and Systems, Commercial and Military • BASSICK Casters, Wheels and other Materials Handling Devices, Flo-Tilt Office Chair Controls • STEWART-WARNER Speedometers and other Automotive, Industrial and Marine Instruments • SOUTH WIND Aviation Heat Exchange Products and Instant Automotive Heaters and Mini Heater • STEWART-WARNER SAF-AIRE and WINKLER Heating and Air Conditioning Equipment • STEWART Die Castings • HOBBS Electric Hour Meters • BASSICK-SACK Furniture Hardware.

All of above trade names are the property of Stewart-Warner Corporation

ola 11 years in sales and sales management positions in the Midwest. Mr. Hawks has been with the company for 10 years.

WARREN JORDAN became associated with Beals' Advertising Agency Inc. on December 15, 1958. He will serve as an account executive. He was formerly employed by another Oklahoma advertising agency.

ROBERT LA SCALLE, veteran in the L. P. gas sales field, has joined Sinclair Oil & Gas Co.'s L. P. gas

sales department in Tulsa as a sales engineer. He previously worked in the L. P. gas sales and engineering departments of other oil companies, and for three years was connected with the retail L. P. gas business in Indiana.

P. B. CALDWELL, head office jobber-distributor representative in Shell Oil Co.'s marketing department, is retiring after 34 years' service with the firm. Henceforth, his duties will be assigned to a senior member of the staff of each of the three vice presidents in

charge of the company's marketing regions. Mr. Caldwell started with Shell in 1925 as a salesman in Nebraska. Thereafter his career developed successfully through a broad range of sales assignments throughout the midwest, culminating in the post of district manager at Duluth, Minn., before he moved to the head office in May 1952.

ROBERT M. JOHNSON is the new western regional manager of General Controls Co. He will be responsible for operations in the 11 western states, with supervision over branch offices in Los Angeles, San Francisco, Portland, Seattle, Denver, Salt Lake City and Phoenix. For the past six years he served as Los Angeles branch manager for the automatic controls firm. He was formerly associated with Johnston Gas Furnace Corp., Pernot & Rich Inc., and Payne Furnace Co., with which he served 15 years in varying sales, engineering and administrative capacities.

FRED L. MCCOY, veteran L. P. gas salesman with Skelly Oil Co., has been named sales representative in Kansas and portions of Colorado, Wyoming and Nebraska for the J. B. Beaird Co. Inc. In his new capacity, Mr. McCoy will headquarter at Lusk, Wyo., in servicing Beaird dalers.

DONALD E. MILLER has been named manager of all tank car and truck distribution for Texas Natural Gasoline Corp. He joined the company last October. He has spent the last 10 years in the L. P. gas industry and during that time has had extensive experience with various marketing companies in distribution.

Deaths

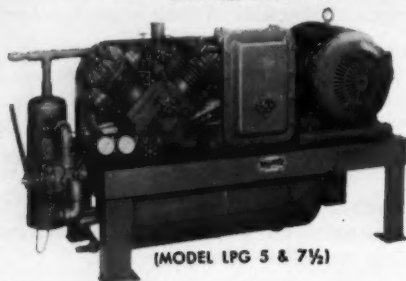
FRANK P. PETERSON, 82, of Tulsa, Okla., retired assistant manager of production for the old Mid-Continent Petroleum Corp., died January 13 at his home. In 1943, he was given the Hanlon Award by the Natural Gasoline Association of America. The award read in part "The record is clear that this man is the father of the liquefied petroleum gas branch of the natural gasoline industry." In 1911 at Follansbee, W. Va., Mr. Peterson produced the first L. P. gas ever recovered from natural gas. He was with Mid-Continent for 18 years.

LIKE MONEY IN THE TANK



**LP GAS
TRANSFER UNIT**

SAVES A TANK IN EVERY 20



Removing and liquefying gas vapors with a Brunner LP Gas Transfer Unit can effect considerable savings.

Tests prove that the "phantom waste tank" that rides with every 20 can be eliminated and translated into extra tank profits for you.

Brunner Transfer Units do a double job of removing all liquids and gas vapors, an impossibility with ordinary liquid pumps.

It's also the efficient and economical way to load tank trailers and discharge into storage tank of ultimate consumer.



REQUIRED READING FOR DISTRIBUTORS, BULK PLANT OPERATORS AND DEALERS

FREE BROCHURE TELLS HOW YOU CAN EFFECT TRANSFER SAVINGS... PROVIDES RECOVERABLE GALLONAGE STATISTICS... DESCRIBES TANK CAR UNLOADING TECHNIQUES AND TROUBLE SHOOTING GUIDE

BRUNNER DIVISION
DUNHAM-BUSH, INC.
WEST HARTFORD, CONN.

DUNHAM-BUSH

WEST HARTFORD, CONNECTICUT • MICHIGAN CITY, INDIANA • MARSHALLTOWN, IOWA • RIVERSIDE, CAL.
BRISTOL, NEW YORK • TORONTO, CANADA • LONDON, ENGLAND

New, lower priced PREST-O-LITE Cylinder

TRADE-MARK

LEADS THE PARADE!



The big reception given the new PREST-O-LITE P-100-N Cylinder justifies all of LINDE's efforts to make it possible. You'll cheer, too, when you discover the safety and quality features of other PREST-O-LITE Cylinders in this new 100-lb. version.

All PREST-O-LITE Cylinders have these and many other quality features—

MARKINGS CAN NEVER WEAKEN CYLINDER WALLS

Controlled, precision imprinting provides complete safety for markings on P-100-N. Wide, integral flange on P-100-W takes all markings. Heading contains markings on P-100-R.

SINGLE-SEAM, TWO-PIECE DESIGN

High-strength alloy steel shells are joined by automatic UNIONMELT Welding on all PREST-O-LITE Cylinders.

Choose now from *three* 100-lb. PREST-O-LITE Cylinders: New P-100-N provides streamlined efficiency at lowest cost. Deluxe P-100-W with the wide flange offers topmost quality—the finest LP-Gas cylinder you can buy! And the P-100-R is built with a sturdy heading, for those who prefer this style.



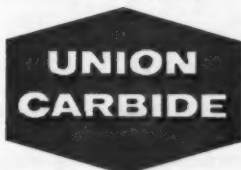
P-100-N

P-100-W

P-100-R

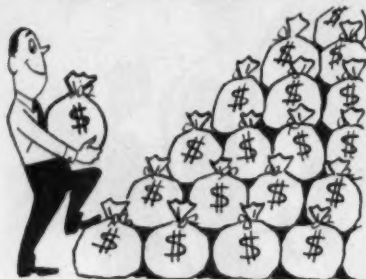
For other details and prices, call or write your nearest LINDE office. LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y. Offices in other principal cities. *In Canada:* Linde Company, Division of Union Carbide Canada Limited.

Linde
TRADE-MARK



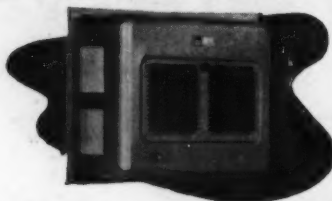
The terms "Linde," "Prest-O-Lite," "Unionmelt," and "Union Carbide" are registered trade-marks of Union Carbide Corporation.

STEP UP PROFITS



SELL

SUBURBAN NOVENT AND DYNAVENT GAS HEATERS



These compact heaters are doing a **BIG** heating job **everywhere**.

Only Suburban Novent and Dynavent Gas Heaters have this exclusive combination of features

Install in window or wall • Take no floor space • Power vented without flue or chimney • Safe . . . burn no room air • Automatic . . . built-in or wall thermostat • Forced warm-air circulation • Even heat floor to ceiling • **SAVE UP TO 30% IN FUEL COSTS.**

Available in three sizes — 20,000 BTU • 35,000 BTU • 45,000 BTU
Approved by AGA, Leading Utilities and LP-Gas Marketers

For complete details write to Dept. BP-359

SUBURBAN APPLIANCE CO.
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ASSOCIATIONS

E. F. Coleman is prexy for New York State LPGA

The election of E. F. Coleman as president highlighted the New York State LPGA annual convention which was held January 7 at the Van Curler Hotel in Schenectady, N. Y. Mr. Coleman succeeds Lawrence H. Glover in the one-year post.

In his acceptance speech, Mr. Coleman urged each of the more than 100 members attending to



Incoming New York State LPGA president E. F. (Bud) Coleman (left) receives congratulations on his election from his predecessor, Lawrence H. Glover.

concentrate his efforts toward getting "at least one new member per man for the association."

The principal speaker at the convention was Med Serif, editorial supervisor, Business Research & Education for Cities Service Petroleum Inc. He gave a talk on "The Art of Juggling the L. P. Gas Dollar," in which he compared the operating costs of the New York State dealers with those of the rest of the Nation.

Another speaker who had the delegates listening with rapt attention was Col. Frank J. Pearson, assistant deputy director of the New York State Civil Defense Commission. Col. Pearson, whose talk was entitled, "What's Doing With Civil Defense," spoke on

the development of warning systems in the event of atom and/or hydrogen bomb attack. The Colonel was introduced by delegate Roy W. Johnson, who was appointed to make a survey of the L. P. gas man's role in the event of a National emergency.

All was not so grim as Civil Defense, however, as the meeting also included a separate Ladies Program, whose organization was in the competent hands of Mrs. John P. (Virginia) Neumann. The feature of the schedule for the delegates' wives was a fashion show.

In addition to Mr. Coleman, the following men were unanimously elected as state association officers: Leonard Liporace, Blue Flame Gas Co. Inc., Hoosick Falls, N. Y., first vice president; Ralph D. Fisk, Fisk Gas Service, Cobleskill, N. Y., second vice president; E. C. Underwood, Rochester, N. Y., re-elected secretary; and John P. Neumann, N & R Sales Corp., Goshen, N. Y., treasurer.

District directors elected at the meeting include: George A. Hauser, Gordon Bierbrauer, John Morrow, Ralph D. Fisk, Jack H. Studley, J. R. Warner, and Bert-ram J. Martin.

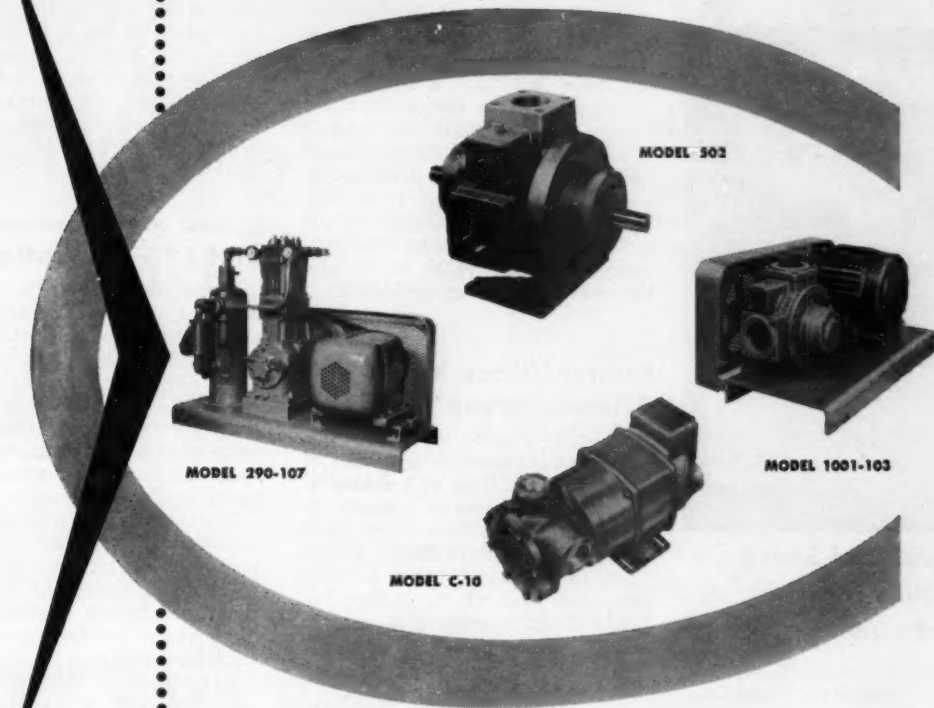
Directors-at-large include: Leonard W. Ferris (re-elected), Household Gas Service Inc., Utica, N. Y.; and John M. Ganey, Fuelane Corp., Albany, N. Y.

State Legislators attend Alabama district meetings

"The primary purpose of the December meetings," reports James L. Deupree, executive secretary, Alabama LPGA, "was to get to know our Legislators better and possibly give the Legislators an opportunity to become better acquainted with our dealers and industry."

"The meetings were very successful and in each district we emphasized the fact that our industry did not have any axes to grind. A large majority of the Legislators stated that if any legislation came up pertaining to the L. P. gas industry they would immediately contact their local

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For loading and unloading tank cars and transports, quickly and efficiently with complete recovery of vapor, there's the #290-107 "dry-cylinder" compressor. A tremendous "first" for Corken's—and you. It can't contaminate your product with oil. The crankcase is separate from the compressor-cylinder. Smooth running, and builds better compression too.

For bulk plant transfer duty, the big #1001-103 or the smaller #501-103 Coro-Vanes perform quietly with surprising speed. They just can't be beat for performance and durability.

The #1002 and #502 Coro-Vanes for transport and delivery truck service are the sweetest running pumps on wheels. You don't throw them away or exchange them. Parts that do finally wear can be replaced economically and easily—on location, without disturbing piping.

For filling cylinders and motor fuel tanks there's the Coro-Flo series. The Coro-Flo is a turbine type pump with only one moving part—the impeller. It gets the job done quickly, efficiently and silently.

There's nothing else like a Corken, and never has been. No other pump at any price, has so many features of practical value to the owner!

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OPERATION SNOWBALL



— a Winter and Spring promotion for profit by Safti-Vent

Safti-Vent, the hottest-profit brand in the already hot market for "sealed" gas wall heaters, introduces OPERATION SNOWBALL.

OPERATION SNOWBALL, Safti-Vent's Spring promotion, offers you a "package" that will build your profits almost automatically and we mean exactly that!

Safti-Vent can make this statement with confidence, because Safti-Vent, and only Safti-Vent has a proved profit record of 7 years of phenomenal growth.

Your Safti-Vent distributor will tell you about Operation Snowball. It's one

of the most important profit proposals you've ever heard!



Safti-Vent

leader in sealed heating

H. C. LITTLE BURNER CO., INC.
102 Woodland Ave., San Rafael, Calif.
Tell us about Operation Snowball.

FIRM _____

YOUR NAME _____

ADDRESS _____

dealer for his advice pertaining to the proposed bills."

Mack McWhorter, L. P. Gas Commission, and Bill Grant, safety engineer, Pan American Fire & Casualty, attended the meetings and remarked on the Consumer Safety Booklets that were distributed to the dealers.

The booklets were handed out to dealers who were asked to see that they reached the customers. If these booklets are properly distributed to the customers along with a message explaining why it is so important that the customers adopt safe and sound practices in using L. P. gas, then it is felt, that Alabama's safety record should show a decided improvement. Insurance rates would also be lower with fewer accidents.

Preston Grace heads Arkansas group for '59

Preston Grace of Batesville, Ark., was installed as president of the Arkansas LPGA at a dinner at the Hotel Lafayette on January 12.

Other 1959 officers are: Sam Kirkpatrick of Fort Smith, a vice president; Robert Morrow, Osceola, vice president; O. L. Dailey Jr., Little Rock, executive secretary; and W. O. Childress, Hot Springs, treasurer.

Missouri, Illinois hold joint convention in '59

For the first time in 1959, the Missouri LPGA and the Illinois LPGA will hold a joint convention and trade show. This Mo-Ill L. P. Gas Exposition will be held in St. Louis, Mo., at the Sheraton-Jefferson Hotel on June 8-10, according to convention chairman Orval Ricks of MLPGA and Rowe Griffith of ILPGA.

It is the opinion of the respective associations that by joining forces their annual convention and trade show can be made more attractive for exhibitors and dealers alike.

WLGA inaugurates home study safety training

The Western Liquid Gas Association is inaugurating and administering a home study safety training program, made possible through LPGA's new Service Training text material.

This training course was prepared by the University of Texas under a \$20,000 grant-in-aid provided by LPGA. The course is adaptable for class study or home study.

WLGA is preparing and administering a home study plan using this new material. This will provide complete training for anyone employed by a member company—and without charge.

Under the plan, a student or his employer will purchase from the University of Texas, the student text, price \$4.25.

Cuban group announces its first LPG convention

Jorge Garcia Meitin, president of the Cuban L. P. Gas Association, announces the first LPG convention at Havana will be held on April 6-8 at the Hotel Copacabana.

Mr. Garcia Meitin announces that invitations have been sent to prominent LPG operators in other Latin-American countries and that many of them expected to attend.

Meetings will be held each afternoon and a small number of booths are available at nominal cost. Accommodations for out of town visitors are available at the Copacabana or any of the other Havana hotels.

Any concerns interested in the event should write Mr. Garcia Meitin at P. O. Box 367, Havana, Cuba.

LPGA opens office in Calgary, Alta., Canada

The opening of a new district office in Calgary, Alta., Canada, and appointments of a manager there and a district secretary at Madison, S. D., for the Liquefied Petroleum Gas Association were announced January 1 by Arthur E. Bone, president.

William J. Fleissner of Madison, S. D., joined the LPGA staff as the district secretary for North and South Dakota.

Chester A. Asplund of Calgary was named manager of the new district office in that city. He will serve LPGA members in Alberta, Manitoba, Saskatchewan and British Columbia.

Mr. Asplund is a Canadian L. P. gas pioneer. His most recent



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industry connection was as president of Sturdie Propane Ltd., until that marketing firm was bought by Canadian Carbohydrate Ltd. The new manager helped organize the first wholesale and retail L. P. gas operation in southern Alberta. He later built Sturdie into a 300-dealer organization. Since retiring from Sturdie, he has been in the real estate and building business. His office is located at 630 17th Ave., S. W., Calgary.

The new Dakotas secretary left Skelgas division of Farmers & Merchants Cooperative Oil Co.,

Madison, S. D., to take the LPGA post. His office is at 1019 W. Center, Madison.

WLGA initiates statewide safe driver awards

The Nation's highest and most coveted award for professional safe driving performance, may now be earned by those employees of member companies who daily drive trucks, transports or automobiles in the conduct of L. P. gas businesses.

The effectiveness of the programs carried on by many individual companies through the National Safety Council, has proved the value of the plan in accident prevention. This statewide program under the auspices of the Western Liquid Gas Association, will be the first such program in the nation, conducted by any trade association on a statewide basis.

Details of the plan; how member companies may enroll their drivers; and the low cost, were all explained in a special announcement that has been mailed to all WLGA members.

In discussing the activity, WLGA's board of directors expressed the thought, that if the awards are presented to all having earned it, at a public session during the annual convention, the value of the award would be even more enhanced.

H. L. Whitelaw, GAMA, in Washington office

H. Leigh Whitelaw, executive vice president of the Gas Appliance Manufacturers Association, now is serving the association from an office in Washington. Until January 1, his office was at GAMA's headquarters in New York.

The Washington office is at 734 15th St., N. W.

The change was announced jointly by Clifford V. Coons, GAMA president and executive vice president of the Rheem Manufacturing Co., and Harold Massey, managing director of the trade association, who said:

"This move provides the association with direct Washington representation at a time when defense and industrial mobilization planning programs are being considered and implemented, and when matters dealing with excise taxes, military and government housing and other projects will require special vigilance."

Mr. Whitelaw, associated with GAMA since 1943, became executive vice president in 1955.

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"MASTER" VISIBLE
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for LPG and NH₃



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your Biggest Dollar Value... because it's TAYLOR-made...

- Completely Corrosion-Resistant
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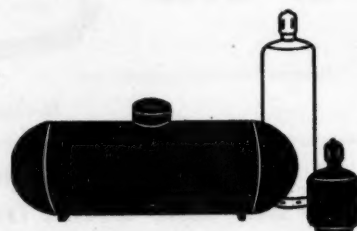
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BUTANE-PROPANE News

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Peerless® GAS CONSOLE HEATERS with Counter Flow Heat (Optional)

Peerless performance means *profits* to you. Because a Peerless puts out heat—lots of heat where it's needed and does it economically.

We recommend the Peerless with Counter Flow Blower Attachment for those really tough jobs where gravity circulation of heat is not adequate. In fact, the boost given in warm air circulation is ample for heating several rooms. Peerless Counter Flow equipment is available for all 50,000 and 65,000 BTU heaters, either radiant or closed front, and is delivered complete with its own temperature controls and six feet of electric cord. It can be bought with the new heater or installed later.

There is a complete line of expertly-engineered Peerless gas console heaters—closed front models from 20,000 to 65,000 BTU input. All models are A.G.A. approved for natural, mixed, manufactured and L.P. gases. And, all include the traditional Peerless quality and smart, contemporary design that has made Peerless the preferred model by both dealer and consumer!

Get the full Peerless performance story. Write, wire, or phone for specifications and prices.

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100 Enterprising Years

WHAT'S NEW

IN PRODUCTS AND TRADE LITERATURE

For further information on items reviewed in this section use the convenient post-paid Readers' Service Cards on pages 97, 98



Post-mounted gaslamp

A post-mounted gaslamp is being manufactured by Falcon Manufacturing. Major components are largely factory prefabricated, reducing on-the-spot assembly to a minimum—ideal for both the dealer and the home owner who wishes to install his own unit. It is constructed on an all steel welded frame and finished in bonderized black or bronze baked enamel, phosphatized to prevent rusting. It is also available in a new coppertone model.

Circle 1 on Readers' Service Card

Instantaneous heating control

A super-sensitive home heating control system which provides instantaneous and continuous modulation of a gas furnace flame, has been introduced by Maxitrol. The control permits continuous circulation of warm air from the furnace, eliminating intermittent

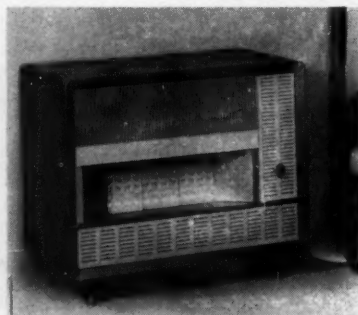
blasts. The tiny electronic unit detects the slightest change in room temperature and, through a transistorized circuit, signals an electronically operated power head to modulate the furnace flame.

Circle 2 on Readers' Service Card

Hi-Lo torches

Bryant Industrial's Hi-Lo venturi torch burner offers 10 to 1 turndown with low-pressure gas—with single-valve control and without a costly air blower or complex control system. A wide-range modulating burner, there is no flashback and no sacrifice of flame stability. Torches are offered at capacities from 120,000 to 1.8 million Btu per hr in the low pressure series and from 200,000 to 9.3 million in the medium-pressure series.

Circle 3 on Readers' Service Card

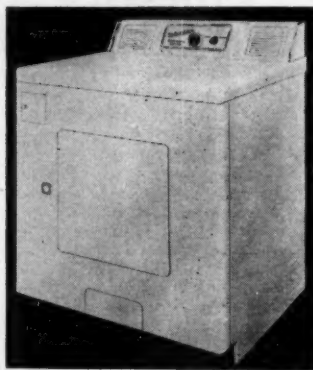


Temco's new heater line

Temco's 1959 Citation line features contemporary styling in all vented radiant and vented circu-

lator models, along with the Temco "Pin Up" gas heater and the Pre-Vent wall heater. The entire line is characterized by an especially low silhouette. Colors for the high-temperature silicone enamel finish have been chosen to conform with the latest ideas in interior decorating. Control centers on the new models are located out front.

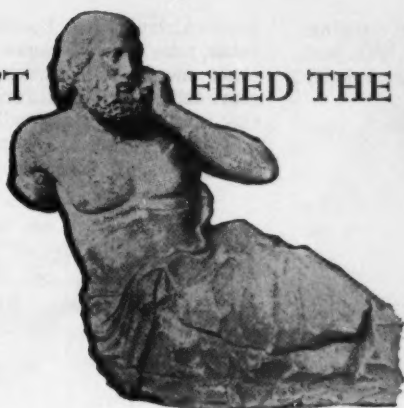
Circle 4 on Readers' Service Card



Low-cost automatic dryer

Suburban Appliance has started production of an automatic gas clothes dryer designed to retail well under \$200, delivered and installed. It operates on the low heat-high air volume principle. It combines a new-type drum of perforated construction, for maximum air-movement, and a 3 in. diameter vent for fast moisture removal. Among the special features are a heat-or-air selector, 2-hour automatic timer control, interior light, automatic gas igni-

DON'T FEED THE DOG THAT BITES YOUR HAND!



A quick check on most companies selling LPG pumps will reveal that they are also engaged in the business of selling oil pumps. The thought occurs that, perhaps, a major part of their revenue is coming from a field highly competitive with the LPG market. If so, you are encouraging the growth of your own competition.

Each time you buy a made-over oil pump, you are feeding the dog that bites your hand! ... and you are coming out at the raw end of the bargain.

Pumps designed for oil cannot, even though modified to meet the demand of LPG properties, give you the long, efficient performance that a SMITH pump will give you.

WE MANUFACTURE LPG PUMPS EXCLUSIVELY!

When you buy a Smith pump you are guaranteed best quality, performance, savings!

These are the features you get with a Smith pump:

SPECIAL BALANCE DESIGN—center pump gear is surrounded by two to four idler gears.

SHAFT ROTATES IN EITHER DIRECTION—two-way operation allows piping to be installed in most convenient manner; pumps in and out; doesn't have to be taken apart to change shaft rotation.

DIRECT DRIVE—pumps are made in proper shaft speeds for both truck PTO drive and direct electric motor drive.

SAFETY—all models are equipped with special, patented mechanical seal of our

own design and manufacture. U.L. approved models available.

FASTEST DELIVERY—pumps develop highest pressures, speed deliveries to consumer tanks.

LONGEST SERVICE LIFE—superior materials developed especially for LPG pumps wear longer.

NO LUBRICATION—very special materials that wear well without lubrication are used.

SPECIAL FACTORY REPAIR METHODS—restore worn pumps to full efficiency at half the cost of a new pump.

There's a Smith pump for every LPG service requirement: for small, medium or large volume transfer work, combination pumps, truck pumps, high capacity heavy-duty pumps, and special models.

Write for NEW complete catalog.

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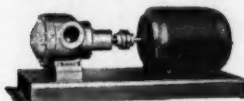


Will fill all small tanks as fast as any larger pump. 100-lb. cys. in 4 minutes or less, 20-lb. cys. in 1 minute or less, fork lift tanks no problem. 10 GPM models EC-1,

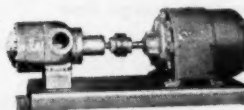
MC-1, and GC-1. 15 GPM model EC-H.



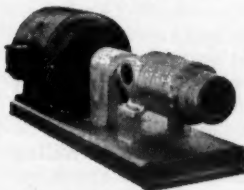
For small volume transfer work. 20 GPM model MC-1044 35 GPM model MC-1044H



For medium volume transfer. 50 GPM model MC-2 or MC-2Q (higher pressure, quiet running)



For large volume transfer 100 GPM model MC-3



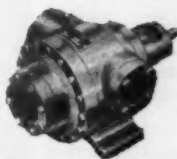
For high capacity loading 150 GPM model MC-4



For delivery truck service where flexibility is desirable. 20 GPM at 500 RPM or 35 GPM at 900 RPM model TC-H



For average truck service 50 GPM model TC-2



For trucks with automatic transmission 50 GPM model ATC-2 100 GPM model ATC-3



For "high flow" delivery truck service 100 GPM model TC-3



let Flo Curves and her
Little
Puzzlers
make your men more productive



Flo rewards your men for learning with ...

an all-expenses-paid VACATION TRIP FOR TWO via TWA SKYLINER. The grand-prize winner can choose 8 fun-filled days in California or 10 days in Nassau and Miami. 50 other wonderful prizes for the runners-up in Flo Curves' Little Puzzlers training contest.

Mail the coupon now, and your men will receive Flo Curves and Her Little Puzzlers in the mail once a month.

There's no charge, of course. This is another feature in Selwyn-Pacific's continuing program of service to the LP dealer.

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Please send me your FREE "Flo Curves and Her Little Puzzlers" training course for my men at no obligation whatsoever.

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Please send _____ copies each month.
(1 for each man)

YOUR NAME

POSITION

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tion, extra-capacity drum opening, large, easy to clean lint trap, and easy-access pilot door. Its capacity is 18 lb of wet clothes.

Circle 5 on Readers' Service Card

Snap-in filter

A snap-in filter that will give maximum air filtration at an approximate cost of 6 cents per month per unit has been developed by Extraer Inc. The unit consists of a flexible steel frame with a metal grid and a snap ring to hold the disposable filter pads in place. The filter pads are made of a fluff acetate material.

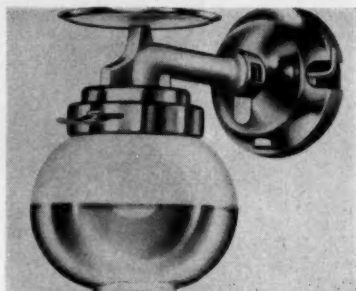
Circle 6 on Readers' Service Card

Hand cutting torches

An injection-type hand cutting torch, designed for use with propane and natural gas, is introduced by Air Reduction. The torch has an "ease-on" cutting oxygen valve which allows smooth and gradual oxygen flow. The torch head is machined silicon bronze forging. For rigidity and strength the brass gas tubes are in a triangular arrangement. The mixer housing is a machined brass forg-

ing which is fed by two short tubes, one for fuel gas and the other one for preheat oxygen. The rear end is a brass forging and the inlet connections will accommodate 1/4, 5/16, or 3/8 in. hose.

Circle 7 on Readers' Service Card



Wall bracket and pendant lamps

General Gas Light has completely restyled and improved construction of the Opalite line of indoor wall bracket and pendant lamps available for use with bottled and natural gas. Three metallic finishes are now available— anodized copper, brass and polished aluminum. All metal parts in the fixtures are made of non-rusting, non-corroding anodized aluminum. Globes are also a new oven-type, heat-resistant glass.

Circle 8 on Readers' Service Card



Universal built-in range line

A completely new line of Universal built-in ranges has been introduced by Cribben & Sexton Co. Available in the line is 14 gas surface cooking units and five super-size oven and broiler units. All models feature Universal's "air conditioned" oven, smokeproof broiling and "obedient burner" cooking. The super-size oven has a built-in circulating control that keeps heat evenly balanced—no hot spots, no cold corners. Smokeproof broiling is made possible by the specially-designed broiler pan which drains away melted fats and greases from

THE SPRAGUE METER CO.
35 SOUTH AVE. • BRIDGEPORT 1, CONN.

the open flame to the pan underneath. The homemaker can dial exactly the heat she wants and each self-lighting "obedient burner" gives her the precise heat instantly.

Circle 9 on Readers' Service Card

Automatic gas lamp control

A control system which automatically turns gas lights up at sundown and turns them down again at dawn, has been developed by White-Rodgers Co. The system is composed of an automatic gas valve, which fits inside the lantern post, and a photocell. One valve can operate four lanterns.

Circle 10 on Readers' Service Card



High capacity nozzles

A new series of high capacity nozzles give finer break-up and are non-clogging, according to the manufacturer, Bete Fog Nozzle. The nozzles employ three separate orifices from each of which a jet impinges on a deflector plate. Here the jets are broken up and intermingled to form a full-cone spray. Made in seven standard models from 1½ in. to 8 in. pipe size, the "K" series covers a flow rate range of 20 to 3000 gpm.

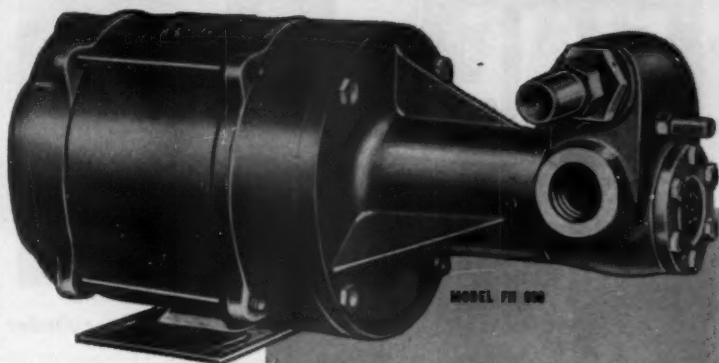
Circle 11 on Readers' Service Card

Heavy-duty forced-air heaters

Reznor has completely redesigned its line of heavy-duty forced air heaters. The line includes 10 sizes ranging in capacity from 400,000 to 2 million Btu per hr. All sizes are available for up-flow, down-flow or horizontal installation. They may be used in a duct system or with a discharge plenum with interchangeable louvered outlets which provide complete flexibility in the selection of the air distribution pattern.

Circle 12 on Readers' Service Card

For Top Quality and Low Cost!



VIKING LP-GAS FUELING PUMPS

FOR FARM TRACTORS
AND TRUCKS

This new, low-priced fueling pump will help you sell farmers. It's made especially for farm use. Pump and motor are mounted directly.

- Compact, light weight (overall length, less than 17" weight only 45 pounds).
- Delivers 5 G.P.M. operating at 3450 R.P.M. No vapor return required.
- Safety by-pass valve on pump casing relieving at 60 PSI.
- Because pump is mounted directly, no alignment problems.
- Used indoors or outdoors with complete safety.

PUMP CONSTRUCTION

- Hardened steel gears
- Carbon graphite internal bearings.
- Shielded external ball bearing to handle radial and thrust loads.
- 1" suction port, ¾" discharge port.
- Mechanical shaft seal. No leaks.

MOTOR CONSTRUCTION

- Explosion-proof ½ HP, 1 PH. 3450 RPM motor.
- Built-in switch.
- Manual thermal overload protection for added safety.
- Capacitor start for low starting current.

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GENERAL L-P GAS TANKS

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Complete Line of Accessories for Single or Double Hook-ups . . . Regulators—Valves—Racks—etc. Everything that is needed for complete Bottle Gas Installation.

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ALUMATONE Aluminum Paint



THREE
GRADES
COVER
EVERY
LP GAS
USE

Formulated to meet the special needs of the LPG industry. Uniform quality at the lowest possible price consistent with the high standard of this superior paint. See catalog for description of three types available. Comes in 1 gal. cans, 5 gal. pails and 55 gal. drums.

NOW . . . PASTEL COLORED ALUMINUM PAINTS

ALUMA-GREEN • ALUMA-BLUE • ALUMA-CORAL

Make your cylinders stand out from others. Extremely attractive and distinctive. Provide all advantages and economies of aluminum paint. Will spray or roll on. Special seal ring on can. Write for details.



Available in 1 or 5-gallon cans
55-gal. drums

BINKS Portable Spray Equipment



Lightweight (3/4 HP—33 lbs.) portable, spray outfit with 115-volt, 60-cycle single phase motor compressor. Two models. Complete with air hose and spray gun.

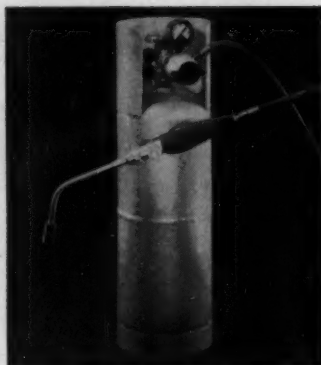
PRESSURE TANK PAINT UNITS FOR BULK PLANTS

For use with separate compressor units. Consists of tank, spray gun, air hose, paint hose and air valve. Two- and 5-gallon sizes.



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6240 OGDEN AVE.
BERWYN (Chicago Sub.) ILLINOIS



Multi-purpose propane cylinder

A 6-lb capacity propane cylinder, designed for use with a wide variety of standard and special valves for any type of propane service, can now be obtained from Linde. It meets the demand for a small-sized, light-weight, and portable cylinder in a wide range of domestic and industrial applications. The P-6, as it is called, can be utilized for liquid or vapor service in the vertical or horizontal position, depending upon the type of valve selected. It weighs 14 lb, complete with valve, and has an overall length of 29 in. and a diameter of 6 3/16 in. The open-end heading provides easy access to the valve in either the vertical or horizontal position.

Circle 13 on Readers' Service Card

Large-capacity regulator

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A pocket-sized tester for the detection of hazardous vapors has been developed by Davis Emergency for quick, on-the-spot checking of work areas. This light-weight combustible gas analyzer is easy to operate in the palm of the hand, or in its own attractive case. It is self contained with exceptionally long battery service life. Instrument with case and all accessories measures 4 x 6 x 5 in., and weighs 3¾ lb.

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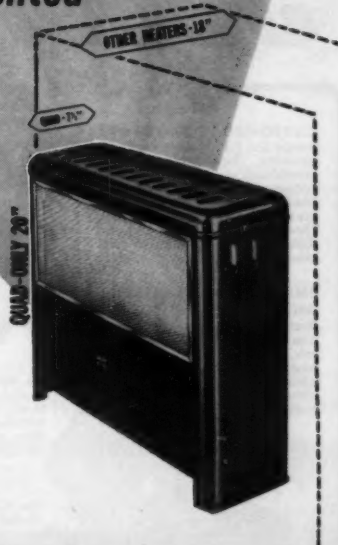
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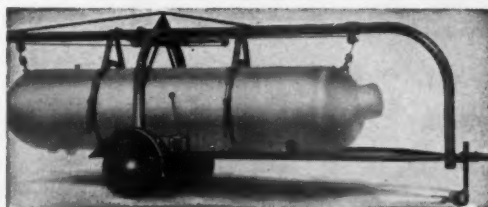


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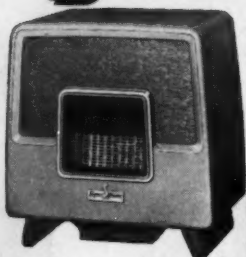
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BUTANE-PROPANE News

is available to body builders and equipment manufacturing companies. The book is published annually to assist body manufacturers and distributors in installing their equipment on Ford chassis. It contains chassis dimensions for the full Ford truck line from the 100 through 1100 series, including the new tilt-cab tandem models and the four-wheel-drive F-100 and F-250, as well as power take-off application data.

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Internal gear rotary pumps data

Deming's four-page bulletin No. 1547 covers the firm's new line of internal gear rotary pumps for the L. P. gas industry. It gives the construction features, capacities, sizes, ratings and dimensions. It is amply and clearly illustrated with half-tones of the pumps themselves, along with a cutaway diagram of the pump and dimension drawings. Other bulletins cover high-pressure pumps for viscous liquids and for L. P. gas service.

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Data processing literature

A low-cost system of punched-card data processing specially designed for small business is described in a folder just published by Remington Rand. The system makes it possible for small companies, or branches and plants of larger ones, to machine process such accounting work as: production control, payroll, inventory control, accounts receivable and sales analysis.

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Transfer pump folder

John Blue offers a folder "About the LP Gas Transfer Pump." It provides service tips for the user. Complete specifications are given. The folder also gives tips on where this pump may be used, and how it works. Complete mounting instructions are given in diagram form.

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Ironcase meters bulletin

American Meter has just published a brochure featuring its 25B and 35B ironcase meters. The bulletin provides complete details on the capacities, construction and performance of both meters.

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POWER SECTION

L. P. gas octane numbers and their relationship to engine performance

MUTUAL adaptation of fuels and engines has always lagged behind the introduction of a unique fuel or engine. Such has been the case with L. P. gas. Although LPG was successfully introduced as a motor fuel in the early 1930's, it is only now that we are investigating the relationship between LPG characteristics and the performance of several bus and truck engines over a range of design and operating conditions.

Heavy duty truck engines are one of the most critical types in relation to antiknock quality. As this normally heavily loaded engine was developed to higher specific outputs and speed, the knock limits of some LPG blends were encountered.

As a result, certain measures had to be taken during 1957 by truck manufacturers. These included reducing LPG engine compression ratios or limiting LPG engine conversions to "local service" type of operation. Meanwhile, various requests were being initiated for consistent LPG anti-knock quality control.

The LPG truck engine dilemma was apparently a product of incompatibility of engine design with LPG fuel characteristics as well as variations in LPG composition in certain geographical areas. Gasoline

In the May, 1958, issue of BUTANE-PROPANE News, the late editor, Carl Abell, told of troubles reported by operators of heavy duty engines powered by LPG. That article put the blame for the problem directly on the presence of high percentages of propylene and butane in the LPG used to power these vehicles and called for standardization of LPG motor fuel.

The accompanying article is the result of research done on the same problem — to find the reason for the troubles reported with LPG motor fuel. It is an abridgement of a report presented before the Society of Automotive Engineers last month in Detroit. The paper was authored by W. G. Armor, International Harvester Co.; H. G. Ingerson, Reo division, White Motor Co.; A. G. Hilf, Highway Products; J. N. Jobaris, Chicago Transit Authority; and H. E. Alquist, Phillips Petroleum Co. The finding of this team is that while composition of LPG motor fuel is important for satisfactory engine operation, even more important is the design of the engine itself.

The conclusions reached through this research project are:

1. The knock-limited performance of LPG blends in the heavy duty truck and bus engines investigated in this program could be rationalized in terms of the Research and Motor octane numbers calculated and determined for these blends.
2. The three most severe truck engines investigated in this program have an L. P. gas antiknock requirement of 90.5 octane number at a point called Severity "E." A graph has been developed which can be used to define Severity "E" and can also be used to test an L. P. gas blend of known composition for its suitability in meeting this octane requirement.
3. Sufficient data were obtained in this program to demonstrate that if carburetor air or mixture temperatures are not controlled to reasonable limits, satisfactory knock-free operation will not be experienced in all heavy duty engines with pure propane.
4. The unique knock-limited characteristics of L. P. gas in these heavy duty engines, basically designed for gasoline, suggest that a new approach is required to design mechanical octane numbers for gaseous fuels.

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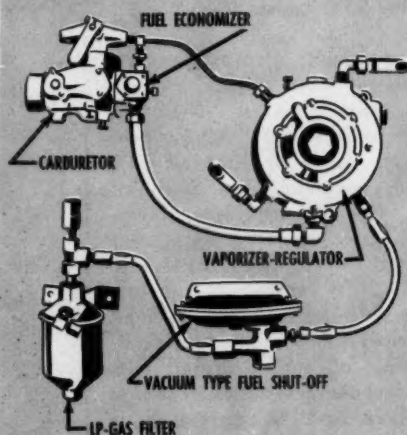
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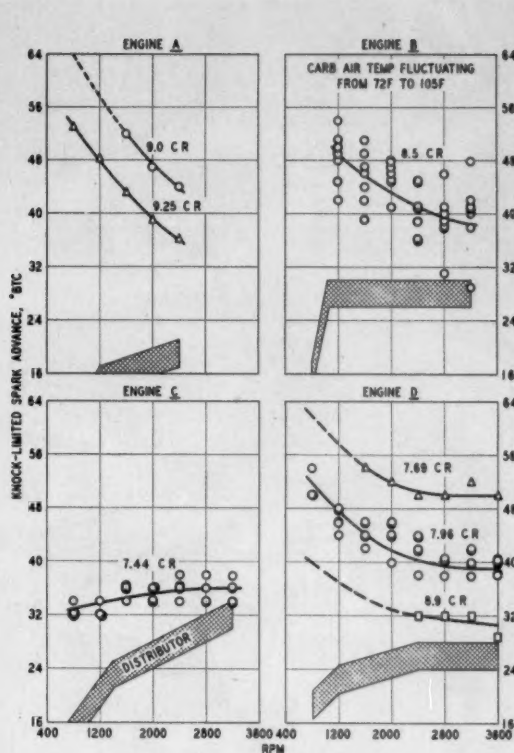


FIGURE 1
THE KNOCK-LIMITED PERFORMANCE OF PROPANE AT FULL THROTTLE AND
CARBURETOR AIR TEMPERATURE OF 55-105° F & 100-150° F COOLANT TEMPERATURE

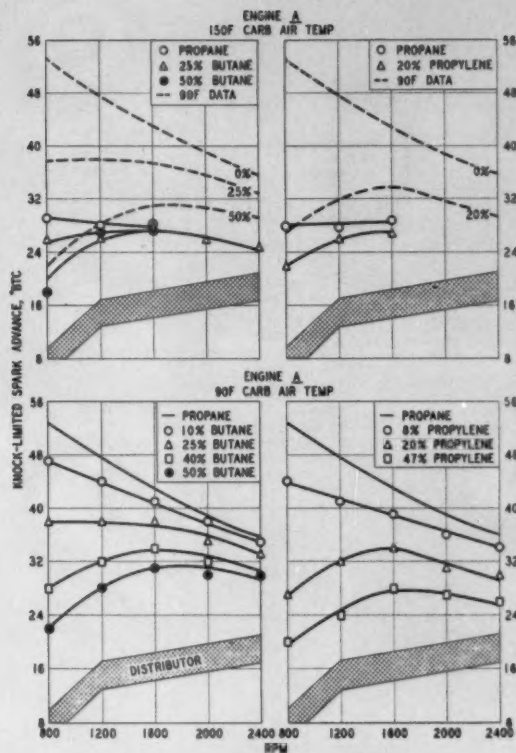


FIGURE 2
THE KNOCK-LIMITED PERFORMANCE OF LP-GAS BLENDS IN ENGINE A, OPERATING
AT 9.25 COMPRESSION RATIO, 180° COOLANT TEMPERATURE AND FULL THROTTLE

line engines are converted for use with LPG by manufacturers merely by stepping up compression ratios, substituting slightly different manifolds and distributors, and installing readily available carburetors and fuel vaporizers. And, the development of these components is almost invariably conducted with "commercial propane."

This casual approach to engine conversion worked all right for low specific output engines, but it would be highly fortunate if it worked on present day heavy duty truck engines designed around regular gasoline averaging 91 Research Octane number.

Recognizing the foregoing considerations, a group of companies, represented by the authors, decided in early 1958 to conduct a cooperative program to find answers to these questions:

- What are the L. P. gas antiknock quality requirements of heavy duty commercial engines now in production?
- What are the effects of variations in design and operating conditions on these

antiknock requirements?

- What are the antiknock characteristics of various L. P. gas blends in these commercial engines?

Complete answers to the above three questions should make it possible to begin fitting LPG engines to the available fuels and these fuels to the engines.

Engines selected for these tests are described in Table 1. These cover a wide range and are representative of those in the field. LPG blends used in the tests are shown in Table 2.

Basic data

All test work was carried to the knock-limit. This is emphasized because pre-ignition is often con-

fused with knock in engines.

As a matter of expediency, all engines were not brought to the same location nor were they tested under exactly the same conditions.

The relationship between the knock-limited spark advance for propane and the distributor advance characteristics (antiknock requirement) of the various engines tested is shown in Fig. 1. All of the data shown in this figure were obtained with propane. These data go a long way toward explaining several of the knock irregularities that have been reported on LPG in the field.

First, it is apparent that propane has no particular "highest useful compression ratio." On the other hand, the allowable compression ratio with propane, and for that

TABLE 1. TEST ENGINES

Engine	Compression Ratio	Displacement Cu In.	HP/Cu In.
A (Bus engine)	9.00	450	0.334 @ 2400 rpm
A (Bus engine)	9.25	450	0.406 @ 2400 rpm
B (Truck engine)	8.50	440	0.500 @ 3200 rpm
C (Truck engine)	7.44	406	0.379 @ 2800 rpm
D (Truck engine)	7.69	401	0.445 @ 3400 rpm
D (Truck engine)	7.96	401	0.478 @ 3400 rpm

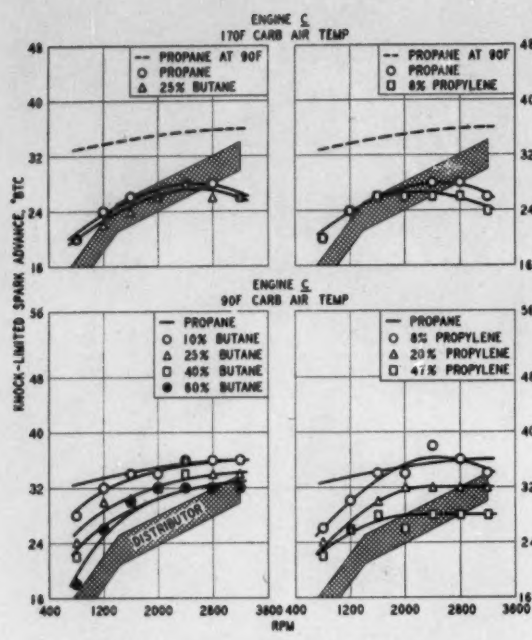


FIGURE 3
THE KNOCK-LIMITED PERFORMANCE OF LP-GAS BLENDS IN ENGINE C OPERATING AT 7.41 COMPRESSION RATIO, 100°F COOLANT TEMPERATURE AND FULL THROTTLE

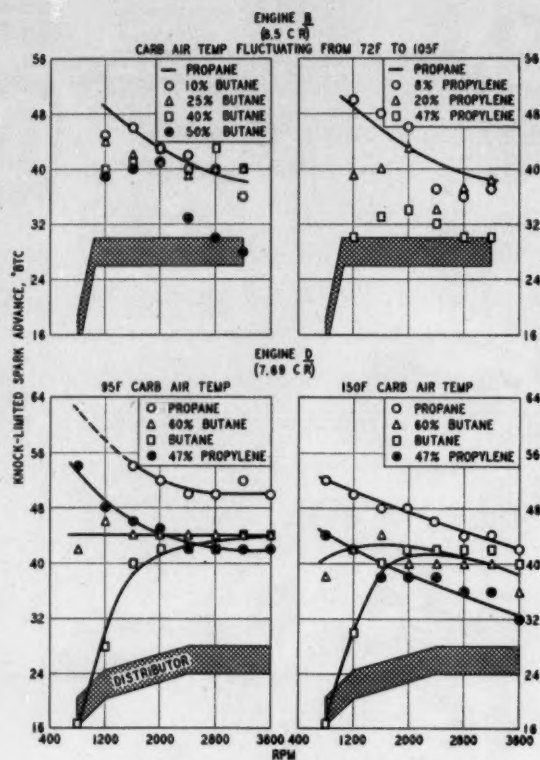


FIGURE 4
THE KNOCK-LIMITED PERFORMANCE OF LP-GAS BLENDS IN ENGINE B AND ENGINE D OPERATED AT FULL THROTTLE

matter any L. P. gas blend, is completely dependent upon the severity level which the designer is able to achieve in the engine.

Another point about the basic knock curves obtained on propane

is that in contrast to most liquid fuels in automotive engines, the knock-limited spark advance decreases with increase in engine speed for all but engine C.

All of the knock-limited spark

advance data obtained with the various LPG blends in engine A at 9.25:1 compression ratio are shown in Fig. 2.

Regardless of the relative performance of the various L. P. gas blends, all of the data at 150 deg. F carburetion air temperature illustrated the desirability of obtaining combustion air from outside the engine compartment. This is rapidly becoming standard practice on heavy duty engines for hot day power recovery.

Knock-limited spark advance for various LPG blends in engine C is shown in Fig. 3. This is at the other end of the severity scale from engine A. It will be noted that the engine is so severe that appreciable concentrations of propylene (up to 20 per cent) and butane (up to 60 per cent) in propane could not be considered much poorer than propane itself. The data obtained at 170 deg. F carburetor air temperature merely illustrate that no LPG blend would avoid knock at this condition. If any of these engines are operating

TABLE 2. OCTANE NUMBERS OF POSSIBLE LPG COMPONENTS AND TEST BLENDS

Component	Octane Number	
	Research	Motor
Propane	111.4	97.1
n-Butane	94.0	89.1
Propylene	101.8	84.9
Ethane	111.5	100.7
Iso-Butane	102.1	97.6
Iso-Pentane	93.0	89.7
Test Blend	Research** Motor**	
	Research**	Motor**
90% Propane* plus 10% n-Butane*	109.7	96.3
75% Propane plus 25% n-Butane	107.1	95.1
60% Propane plus 40% n-Butane	104.4	93.9
50% Propane plus 50% n-Butane	102.7	93.1
40% Propane plus 60% n-Butane	101.0	92.3
92% Propane plus 8% Propylene	110.6	96.1
80% Propane plus 20% Propylene	109.5	94.7
53% Propane plus 47% Propylene	106.9	91.4

*All percentages referred to in this report are liquid volume percent.

**Octane numbers calculated from components as follows:

(Liq. Vol. % of A) (O.N. of A) plus (Liq. Vol. % of B) (O.N. of B) = O.N. of Blend

100



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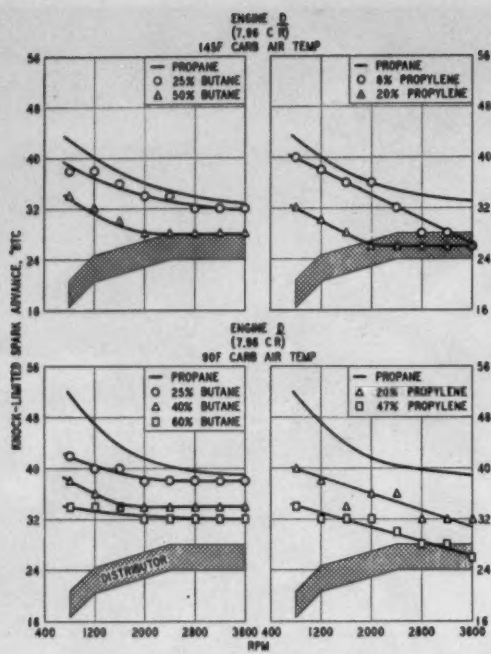


FIGURE 5
THE KNOCK-LIMITED PERFORMANCE OF L.P.-GAS BLENDS IN ENGINE D AT
TWO CARBURETOR AIR TEMPERATURES, COOLANT TEMPERATURE, 100°F

in the field and drawing combustion air from under the hood, knock damage could hardly be attributed to fuel composition.

In contrast to the wide severity spread between the two 6-cylinder engines tested, the two V-8 engines—engine B and engine D—treated the L. P. gas blends in a rather similar fashion at comparable compression ratios. The data on Fig. 4 for engine D at 7.69:1 compression ratio and both high and low carburetor air temperatures indicate that the knock limits of even 100 per cent butane or a blend of 47 per cent propylene in propane should not be encountered in actual service.

Fig. 5 shows performance of various LPG blends in engine D. It appears that by holding reasonable carburetor air temperatures, the knock limits of 50 per cent butane or 20 per cent propylene in propane would not interfere with normal engine operation.

Analysis of results

The test data are representative of the knock-limited performance of a variety of LPG blends in several heavy duty commercial engines in the dynamometer stand under reasonably controlled conditions.

From these results we must extract (a) future design trends and (b) LPG availability considerations—LPG antiknock characteristics which will provide maximum economy for the ultimate consumer.

Considering the research done, it is possible to list the concentrations of propylene and butane in propane which cannot be exceeded because of knock in the various engines. These limits are shown in Table 2.

Table 2 also implies that the three most critical engines rate a blend of 20 per cent propylene in propane as roughly equivalent to 50 per cent butane in propane. On this basis, these three engines have their maximum antiknock requirement at about the same severity level.

We then compare the severity levels of these engines to similar units operating on gasoline. Fig. 6 shows the calculated Research and Motor Octane numbers of the 20 per cent propylene and 50 per cent butane blends plotted against an arbitrary severity scale. Curves for an average U. S. regular gasoline and propane itself have been included for reference purposes.

It is seen in Fig. 6 that the only point where 20 per cent propylene

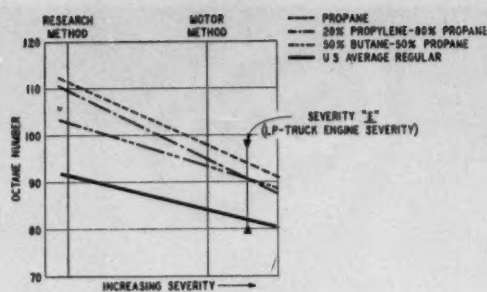


FIGURE 6
RELATIVE SEVERITY OF FULL SCALE TRUCK AND LABORATORY ENGINES

and 50 per cent butane can be rated the same is at a condition more severe than the Motor Method. Thus the severity of the three most critical LPG engines tested in this program is taken to be this point. In line with previous knowledge we find that the severity level for the LPG engines does not appear out of line with our previous experience on gasoline engines.

Fig. 6 also shows that the octane number indicated at the point of equivalent rating is 90.5. This is very close to the rating which the equivalent gasoline engines would have given the average U. S. regular gasoline. Also, it shows that propane itself has an indicated octane number of only 94.0 at the severity level shown for the three critical truck engines.

If the foregoing analysis of current heavy duty truck engines is correct, two major remedial actions suggest themselves:

1. For existing engines in the field, some kind of LPG antiknock specification is needed.
2. Some method should be found to reduce the severity of the LPG engine to a level approaching that of its gasoline counterpart.

A correlation was found which suggests that Fig. 6 can be used as a graph to show whether any particular LPG blend would be suitable in the most severe heavy duty truck engines. The definition of a satisfactory L. P. gas blend could be: any LPG blend whose severity E octane number is equal to or better than 90.5.

Throughout the foregoing discussion on LPG antiknock requirements for current engines, there has been an implication that the severity of present LPG engines

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CALENDAR

Coming events in the Industry

1959

March 8-10—Indiana LPGA Trade Show and Convention—Claypool Hotel, Indianapolis, Ind.

March 11-13—Gas Display, Virginia Home Economics Convention, Roanoke, Va.

March 15-17—Ohio LPGA Convention and Trade Show—Sheraton-Gibson Hotel, Cincinnati, Ohio.

March 17-19—Pennsylvania LPGA Management Conference—Pennsylvania State University, University Park, Pa.

March 30-31—Iowa LPGA Convention—Kirkwood Hotel, Des Moines, Iowa.

April 1-3—Southeast District LPGA Convention and Trade Show—Atlanta-Biltmore Hotel, Atlanta, Ga.

April 6-8—Cuban LPGA Convention and Trade Show—Hotel Copacabana, Havana, Cuba.

April 9-11—Western Liquid Gas Association Tenth Annual Convention and Trade Show—St. Francis Hotel, San Francisco, Calif.

April 12-13—Nebraska LPGA Annual Convention—Hotel Yancey, Grand Island, Neb.

April 12-14—Mississippi LP-Gas Dealers Association Annual Convention—Edgewater Gulf Hotel, Edgewater Park, Miss.

April 19-20—Kansas LPGA 14th Annual Convention and Business Meeting—Allis Hotel, Wichita, Kansas.

April 20-23—Texas Butane Management Institute—Sponsored by the University of Texas—Fort Clark Guest Ranch, near Brackettville, Texas.

April 22-24—Natural Gasoline Association of America 38th Annual Convention—Baker & Adolphus Hotels, Dallas, Texas.

May 3-6—Liquefied Petroleum Gas Association 28th Annual National Convention and Trade Show—Conrad Hilton Hotel, Chicago.

May 25-26—Montana-Wyoming LPGA Joint Convention—Northern Hotel, Billings, Mont.

All associations are invited to send in dates of their forthcoming meetings for this calendar.

May 26—Maryland LPGA Annual Convention—Lord Baltimore Hotel, Baltimore, Md.

May 30-June 5—5th World Petroleum Congress—Coliseum, New York, N. Y.

June 7-9—Northwest District LPGA Convention—Portland, Ore.

June 8-10—Missouri LPGA and Illinois LPGA Joint Convention and Trade Show—Known as the Mo-Ill L. P. Gas Exposition—Sheraton-Jefferson Hotel, St. Louis, Mo.

June 14-16—Colorado LPGA Convention—Colorado Hotel, Glenwood Springs, Colo.

June 14-16—Arkansas LPGA Annual Convention.

June 24-26—Texas Butane Dealers Association Convention and L. P. Gas Market—Adolphus Hotel, Dallas, Texas.

August 2-4—Kentucky LPGA Annual Convention and Trade Show—Kentucky Hotel, Louisville, Ky.

August 2-4—Alabama LPGA Annual Convention—Birmingham, Ala.

August 9-14—L. P. Gas Conference—Sponsored by the Florida LPGA—University of Florida, Gainesville, Fla.

August 16-18—Nevada, Idaho, Utah—Joint Convention and Trade Show—Holiday Hotel, Reno, Nev.

September 13-15—North Carolina LPGA Annual Meeting and Convention—Sir Walter Raleigh Hotel, Raleigh, N. C.

September 17—Pennsylvania LPGA Convention—Cocoa Inn, Hershey, Pa.

October 8-9—California Natural Gasoline Association 34th Annual Fall Meeting—Huntington-Sheraton Hotel, Pasadena, Calif.

October 12-14—Northeast Regional LPGA Convention and Trade Show—Sheraton-Park Hotel, Washington, D. C.

can be reduced. Sufficient data have been obtained on these engines to show that if the inlet temperature is not controlled to reasonable limits by drawing air from outside of the hood and using cold intake manifolds, specifying L. P. gas antiknock quality is of little value. In fact, evidence has been obtained to suggest that field knock problems experienced by some truck engines during the summer of 1957 could have been due to excessive inlet temperatures as well as high propylene content.

It has been mentioned earlier in this paper that even with the best manifold design and external air source, there are going to be periods—particularly southwestern U. S. summers—when the air going to the engine combustion chambers will be on the order of 120 to 140 deg. F. Under such circumstances, an effective method of charge cooling is to utilize the latent heat and expansion cooling available from the LPG itself.

This can be done by substituting a heat exchanger in the carburetor air duct as an alternate to the present converters which merely help lower the engine coolant temperature.

In addition to these temperature considerations, there is one other factor which may outweigh everything else in causing the apparent excessive severity in these engines. The curves of knock-limited spark advance versus rpm obtained on most of the LPG blends in most of the engines have just the reverse slope to that obtained on all full boiling range gasolines and pure hydrocarbon reference fuels. Since the optimum spark for an engine using L. P. gas increases with an increase in rpm, this unique knock-limited curve forces the L. P. gas engine to have its maximum requirement at its maximum speed. Thus, it appears that a real contribution to the mutual adaptation of L. P. gas to engines and vice versa will await engine developments which will flip the knock-limited spark advance versus rpm curve for LPG blends to a characteristic more like ordinary liquid hydrocarbons. It is quite evident that mechanical octane number designs for liquid and gaseous fuels are horses of two different colors. ■

Hard starting hot engines

Occasionally complaints are received that a customer is having starting trouble when the engine is hot. Of course the first target to blame is the carburetor system, the engine starts cold and runs well, but when shut off after considerable running time it can't be started until it is pulled or pushed a few feet. This problem exists with gasoline systems as well as LPG and we will try to pass on an experience of this nature and how it was corrected.

On a Dodge bulk delivery truck, hard starting occurred after the truck had run at fast idle while pumping off its load of fuel, when the vehicle was left to cool off it would start promptly. The entire ignition system was checked and found to be okay, however a check at the spark plugs was made with the engine hot and not running. The resistors in the spark plug were found to be open causing a leak in current and resulting in not enough spark to fire the mixtures.

New plugs were thoroughly tested and installed in the engine and good starting under any condition is once again present.

Once again we remind you, that a thorough check of the ignition system should include the entire system—from battery to plugs.

—Courtesy Century News

Bowser Inc. gets sales rights to "Pottermeter"

An agreement has given Bowser Inc., Fort Wayne, Ind., exclusive sales rights in specified industrial areas to a liquid metering device, known as the "Pottermeter," and to other electronic controls and registering products manufactured by Potter Aeronautical Corp., Union, N. J.

Announced jointly by R. Hosken Damon, Bowser president, and David M. Potter, president of the New Jersey firm, the agreement calls for immediate formation of a new sales section in the Bowser marketing organization. This new sales group will be known as the Bowser-Pottermeter division.

Bowser has long been known for its liquid handling and metering equipment supplied the petroleum industry. Its rights to the Potter equipment will be in those industrial areas plus aviation ground refueling systems.

"It was only natural," the announcement concluded, "that Bowser and Potter should join hands in this new sales venture."

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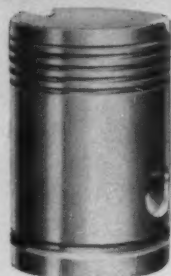
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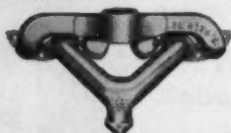
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Readers and author comment on LPG engine tune-up article

SEVERAL of our readers have questioned certain statements made by George M. Galster in the article titled, "Tune-Up Hints for LPG Engines," which appeared in the December 1958 issue of BUTANE-PROPANE News.

Three of them, in particular, wrote lucidly and at some length, and their points were well made.

Mr. Galster was asked to clarify his remarks, which he has done.

In the interests of accuracy and a better understanding of the statements, we are repeating them here, together with the comments of three of our readers and Mr. Galster's reply. The three are C. F. Butterworth of Acme Carburetion Inc., Mankato, Minn.; Russell C. Williams, Tuloma Gas Products Co., Tulsa, Okla.; and F. E. Pilling, Marvel-Schebler Products division, Borg-Warner Corp., Decatur, Ill. All are highly respected in the field of LPG power, as is the author, George Galster, service manager for Champion Spark Plug Co.

Engine compression

Statement: "Because L. P. gas has good anti-knock qualities, engine compression can be increased by approximately one ratio... It is usually advisable to limit the increase of compression to about one ratio because higher increases might place undue stress on engine parts not designed for unusually high pressures."

Pilling: "This may have been true several years ago; however, today it is quite common to find compression ratios of 8 to 1 or greater, and in these ranges our

company would certainly not recommend increasing the compression pressure."

Butterworth: "In many cases the engine is built by the manufacturer in several different compression ratios, although (each model is) identical in every other way. Then from year to year the compression is gradually raised, even though the basic engine may be in production for as much as 15 to 20 years... Engines that came out with the compression ratio of not more than much over 4 to 1 when burning distillate... (when) put out on gasoline came out to around 6 to 1. Then through the years the ratio would be pushed up to 7 to 1 for gasoline operation."

"One of the most widely used makes of tractors in the business is John Deere. We raised many of those which came out at a ratio of 4.2 to 1 as distillate burners to close to 8 to 1 on LPG, with marvelous results. However, we make sure that timing is put back a good deal, and how much it is cut back depends upon where it came out at the factory."

Galster: "In the article we commented that it is usually advisable to limit increases to about one ratio... It is certainly true... that much higher compressions can often be used successfully with LPG... In the usual automotive or tractor engine, however, it appears that a more conservative increase is desirable in order to avoid possible bearing, valve, or cylinder head problems—especially if the change is accomplished by planing the head, and insufficient metal thickness remains in water-cooled sections..."

"The optimum increase will be affected, of course, by the effective anti-knock rating of the fuel (whether the mix is largely propane or butane) and by other factors which affect detonation characteristics, such as breathing characteristics, combustion chamber design, jacket temperatures, and spark timing. Mean loadings expected in service should also be considered . . . Thus, it seems reasonable . . . to consult with the engine manufacturer when conversions exceed an increase of about one ratio."

Temperature

Statement: It is sometimes necessary to install new thermostats and permanent anti-freeze for winter operation in order to maintain cylinder head temperatures at between 160 and 180 deg. F. Also, for engines under heavy duty operation, additional radiator capacity may have to be provided. In extremely cold weather operation, it is sometimes advisable to use an immersion type or electric cylinder block warmer in order to provide quicker starting."

Williams: L.P. gas requires the use of a cooling system thermostat, summer and winter, to maintain a constant air-fuel ratio to the engine; therefore, the thermostat should be 180 deg. temperature control, which is the preferred operating temperature. Additional radiator capacity or cylinder block heater is no more necessary for an LPG engine than it is for gasoline or diesel operation."

Butterworth: "We have never encountered the need for additional radiator capacity when using LPG. As a matter of fact our engines run cooler, and this is logical, because the higher compression puts more of the heat energy to the draw bar. . . . With clean combustion chambers, we avoid the heat retention in that combustion chamber, which occurs in the case of gasoline after deposit build-up."

Galster: "With regard to actual capacity of the radiator, heat transfer into the water jacket can be roughly calculated as 40-45 Btu per brake horsepower per minute. Thus, if power ratings of the engine are substantially increased

by the conversion, the ability of the radiator to dissipate this additional heat should be considered. This is especially important, of course, if automotive engine is converted for stationary service and the effect of ram air disappears."

Intake and exhaust manifold

Statement: "Since LPG is a gas under normal pressure and temperature, no heat is required on the intake manifold. In fact, higher

density of charge can be maintained and better power and economy produced, if the exhaust and intake manifolds can be separated or the 'hot spots' blocked off with a steel plate."

Williams: "The intake and exhaust manifold should never be blocked off with a steel plate, but should always have an air space between them. It may be necessary to install new LPG manifolds to do this."

(Mr. Butterworth also disagreed with this statement.)

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Galster: "Your reader(s) are correct. While use of a steel 'blocking' plate may be a simple field modification, there could be excessive heat transfer with certain manifold arrangements, causing serious loss in efficiency due to lowered charge density."

Valve guides

Statement: "To avoid excessive valve temperatures and possible valve sticking, it is often necessary to shorten the valve guides which extend into the exhaust passages. This is particularly true on older engines. It is also advisable to check with the engine manufacturer for different valve-guide stem clearances and tappet adjustments which they may recommend."

Butterworth: "We have never found an occasion for difference in valve adjustment settings for gasoline. . . . Our engines operate cooler than on gasoline and as I understand it, it's heat that causes metal to stretch or expand and therefore (make it necessary to have) valve clearance in an engine."

Pilling: "I have never heard of the necessity for shortening valve guides, nor have I heard of using different valve guide clearances, and certainly not a variation in tappet adjustments."

Galster: "(Implication that the problem of valves sticking afflicts all LPG conversions was not intended.) Field experience has shown, however, that valve problems in a high compression converted engine can occur where none existed before on gasoline operation. Manufacturers are usually pleased to suggest changes which they consider desirable for maximum valve life."

"(Regarding changed tappet clearances), valve lash in some gasoline engines (particularly those in constant speed service) may be 10 to 20 per cent larger than optimum so as to increase closing velocity and thereby retard deposit formation on the valve face."

"By the same token, possible modification of the valve guides may prove desirable if for some reason the original tolerances and geometry were selected to minimize the effects of varnish and other deposits. For example, a valve guide which protrudes into the port may operate at higher temperature after the conversion is made. This section of the guides may then become an area where the lubricant breaks down, forming heavy stem deposits."

Exhaust analyzer

Statement: "LPG has a narrower flammability range than gasoline, so it is advisable to use an exhaust analyzer to set optimum

idle and high speed fuel/air ratios. This will also help to improve cold starting characteristics. Be sure that the analyzer is calibrated for LPG . . . don't use a gasoline or natural gas exhaust analyzer. The power mixture should never be set leaner than 14.2:1, using the LPG analyzer scale."

(Both Mr. Pilling and Mr. Butterworth questioned the need for an analyzer calibrated for LPG. "We get our maximum amount of power at the same spot on the dial regardless of what the number happens to read," said Mr. Pilling.)

Butterworth: "An exhaust gas analyzer is not used for setting the idle adjustment . . . The vacuum gauge is the best and most accurate way to set an idle adjustment."

Galster: "For gasoline engine operation, best power settings normally are in the range 11½-13½:1; best economy, 13½-15:1. LPG mixtures on the other hand can be considered to range from about 13-14:1 for best power; 14-15½:1 for best economy."

"However, as the Standard Oil Co. of Indiana points out in its Engineering Bulletin FT-53, the mixture ratio-power curve of LPG is relatively flat; thus, engines using LPG can be operated relatively lean without detectable power loss. Therefore, to avoid possible valve burning tendencies, use of an exhaust gas analyzer is advisable for setting load adjustments in the field (Where chassis dynamometer equipment is available, the setting of mixtures can, of course, be made against the power meter)."

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Hollanders like LPG carburetion

CONSIDERABLE headway is being made in introducing LPG carburetion into the Netherlands. Several American manufacturers are exporting carburetors to that country, and the number of highway service stations dispensing propane is increasing rapidly. We are indebted to N. V. American Parts Service, Breda, Holland, who are distributors for J & S LPG carburetion equipment, for the photographs reproduced here-with. ■



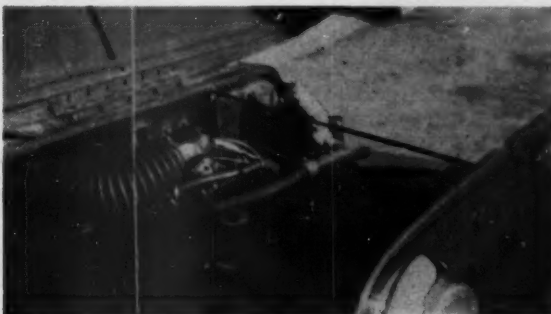
The LPG tank is in the trunk in this Ford Consul (above) as is the usual case in American automobiles. Converted engine (below) is seen under the hood.



A British Commer large panel truck (upper) is shown with LPG tank on the side. The converted engine (lower) is under the driver's seat.



A police department Willys Jeep (above) is shown with LPG tank in the rear. A look under the hood (below) shows the converted engine.





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EXPERIENCED LP GAS CARBURETION man to sell and install all types of conversions. Give age, experience, references and salary desired. Reply Box 6, BUTANE-PROPANE News, 198 So. Alvarado St., Los Angeles 57, Calif.

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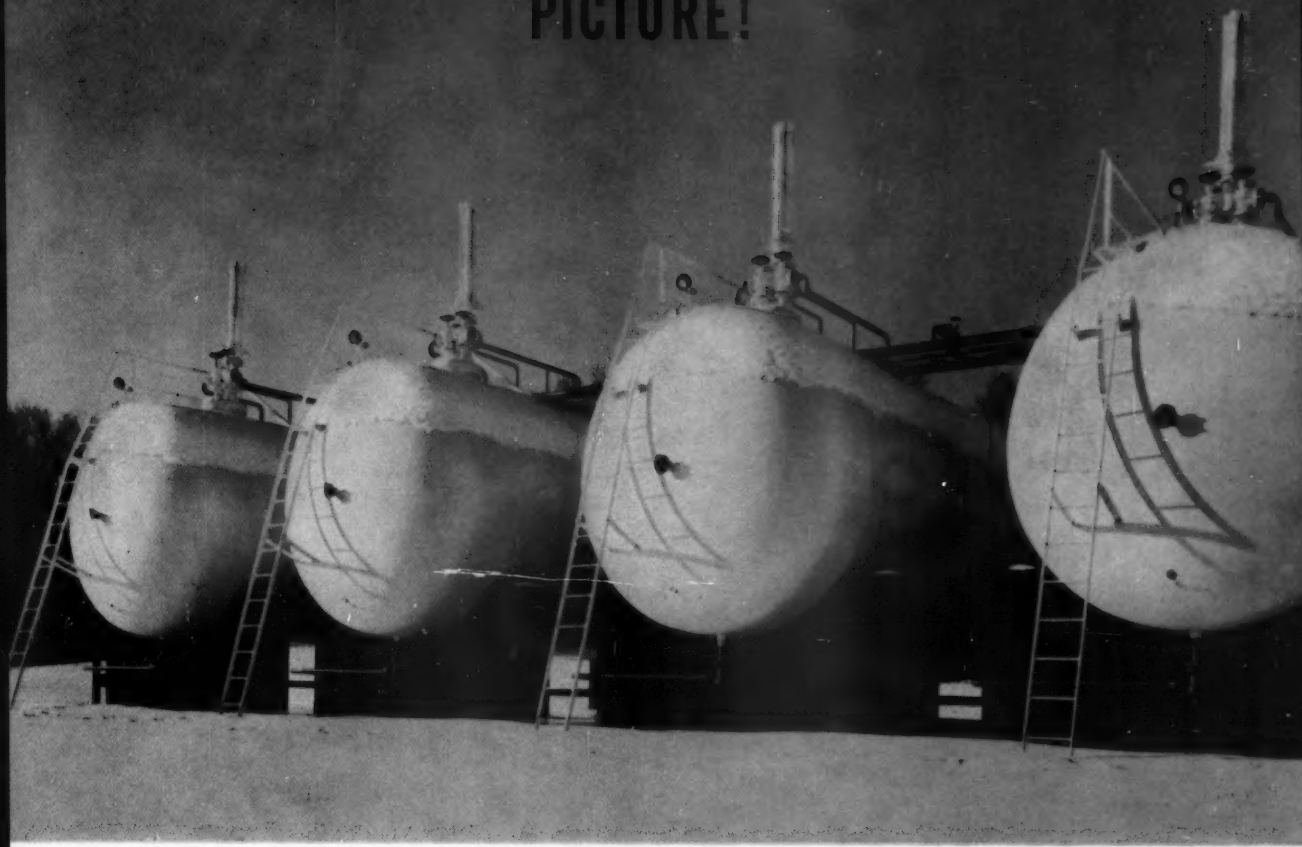
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